INCH-POUND
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SUPERSEDING
MIL-M-38510/371A
8 AUGUST 1986

MILITARY SPECIFICATION

MICROCIRCUITS, DIGITAL, BIPOLAR, ADVANCED, LOW-POWER SCHOTTKY TTL, FLIP-FLOPS, MONOLITHIC SILICON

Inactive for new design after 8 July 1997

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product herein shall consist of this specification sheet and MIL-PRF 38535.

1. SCOPE

1.1 Scope. This specification covers the detail requirements for monolithic silicon, advanced, low-power Schottky TTL, flip flops, bistable logic microcircuits. Two product assurance classes and a choice of case outlines/lead finish are provided for each type and are reflected in the complete part number. For this product, the requirements of MIL-M-38510 have been superseded by MIL-PRF-38535, (see 6.3).

1.2 Part or Identifying Number (PIN). The PIN is in accordance with MIL-PRF-38535, and as specified herein.

1.2.1 Device types. The device types are as follows:

Device type	Circuit
01	Dual D-type Flip-Flop with Clear and Preset
02	Dual J-$\overline{K}$ Flip-Flop with Clear and Preset
03	Dual J-K Flip-Flop with Clear and Preset
04	Octal D-type Flip-Flop with 3-State Outputs
05	Octal D-type Flip-Flop with 3-State Inverted Outputs
06	Dual 4-Bit D-Type Flip-Flop with Clear and 3-State Outputs
07	Dual 4-Bit D-Type Flip-Flop with Clear and 3-State Inverted Outputs

1.2.2 Device class. The device class is the product assurance level as defined in MIL-PRF-38535.

Comments, suggestions, or questions on this document should be addressed to: Commander, Defense Supply Center Columbus, ATTN: DSCC-VAS, 3990 East Broad St., Columbus, OH 43218-3990, or emailed to bipolar@dscc.dla.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at www.dodssp.daps.mil.

1.2.3 Case outlines. The case outlines are as designated in MIL-STD-1835 and as follows:

Outline letter	Descriptive designator	Terminals	Package style
A	GDFP5-F14 or CDFP6-F14	14	Flat pack
B	GDFP4-F14	14	Flat pack
C	GDIP1-T14 or CDIP2-T14	14	Dual-in-line
D	GDFP1-F14 or CDFP2-F14	14	Flat pack
E	GDIP1-T16 or CDIP2-T16	16	Dual-in-line
F	GDFP2-F16 or CDFP3-F16	16	Flat pack
K	GDFP2-F24 or CDFP3-F24	24	Flat pack
L	GDIP3-T24 or CDIP4-T24	24	dual-in-line package
R	GDIP1-T20 or CDIP2-T20	20	dual-in-line package
S	GDFP2-F20 or CDFP3-F20	20	Flat pack
2	CQCC1-N20	20	Square leadless chip carrier
3	CQCC1-N28	28	Square leadless chip carrier

1.3 Absolute maximum ratings.

Supply voltage range ..... -0.5 V dc to +7.0 V dc
Input voltage range ..... -1.5 V dc at -18 mA to +7.0 V dc
Storage temperature range ..... -65° to +150°C

Maximum power dissipation, (P_D) 1/ :
- Device type 01 and 02..... 11 mW
- Device type 03 ..... 13 mW
- Device type 04 and 05..... 19 mW
- Device type 06 and 07..... 22 mW

Lead temperature (soldering, 10 seconds)..... 300°C
Thermal resistance, junction to case (θ_{JC}):
- Cases A, B, C, D, E, F, K, L, R, S, 2, and 3 (See MIL-STD-1835)
- Junction temperature (T_J) 3/..... 175°C

1.4 Recommended operating conditions.

Supply voltage (V_{CC}) ..... 4.5 V dc minimum to 5.5 V dc maximum
Minimum high-level input voltage (V_{IH}) ..... 2.0 V dc
Maximum low-level input voltage (V_{IL}) ..... 0.8 V dc
Case operating temperature range (T_C) ..... -55 °C to +125 °C
Width of clock pulse high (t_p CLOCK):
- Device type 01, 02, 04, 05, 06, and 07..... 16.5 ns
- Device type 03 ..... 20 ns

Width of CLEAR pulse (t_p $\overline{\text{CLEAR}}$):
- Device types 01, 02, and 03..... 15 ns
- Device type 06 ..... 10 ns

Width of PRESET pulse (t_p $\overline{\text{PRESET}}$):
- Device types 01, 02, and 03..... 15 ns
- Device type 07 ..... 10 ns

1/ Must withstand the added P_D due to short-circuit test (e.g., I_{OS}).
2/ Maximum junction temperature should not be exceeded except for allowable short duration burn-in screening conditions in according with MIL-PRF-38535.

Data setup time:
Device type 01, 02, 04, and 05..... 15 ns
Device type 03 ..... 25 ns
Device types 06 and 07..... 15 ns
$\overline{CLR}$ or $\overline{PR}$ inactive state setup time:
Device type 01, 02, 06, and 07..... 10 ns
Device type 03 ..... 20 ns
Data hold time (t_p HOLD):
Device type 01 ..... 2 ns
Device type 02 and 03..... 0 ns
Device type 04, 05, 06, and 07..... 4 ns

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4, or 5 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3, 4, or 5 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications and Standards. The following specifications and standards form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-PRF-38535 - Integrated Circuits (Microcircuits) Manufacturing, General Specification for.

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-883 - Test Method Standard for Microelectronics.
MIL-STD-1835 - Interface Standard Electronic Component Case Outlines

(Copies of these documents are available online at http://assist.daps.dla.mil;quicksearch/ or www.dodssp.daps.mil or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Qualification. Microcircuits furnished under this specification shall be products that are manufactured by a manufacturer authorized by the qualifying activity for listing on the applicable qualified manufacturers list before contract award (see 4.3 and 6.4).

3.2 Item requirements. The individual item requirements shall be in accordance with MIL-PRF-38535 and as specified herein or as modified in the device manufacturer's Quality Management (QM) plan. The modification in the QM plan shall not affect the form, fit, or function as described herein.

3.3 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-PRF-38535 and herein.

3.3.1 Terminal connections and logic diagrams. The terminal connections and logic diagrams shall be as specified on figures 1 and 2.

3.3.2 Truth tables. The truth tables and logic equations shall be as specified on figure 3.

3.3.3 Schematic circuits. The schematic circuits shall be maintained by the manufacturer and made available to the qualifying activity and the preparing activity (DSCC-VAS) upon request.

3.3.4 Case outlines. The case outlines shall be as specified in 1.2.3.

3.4 Lead material and finish. The lead material and finish shall be in accordance with MIL-PRF-38535 (see 6.6).

3.5 Electrical performance characteristics. The electrical performance characteristics are as specified in table I, and apply over the full recommended case operating temperature range, unless otherwise specified.

3.6 Electrical test requirements. The electrical test requirements for each device class shall be the subgroups specified in table II. The electrical tests for each subgroup are described in table III.

3.7 Marking. Marking shall be in accordance with MIL-PRF-38535.

3.8 Microcircuit group assignment. The devices covered by this specification shall be in microcircuit group number 10 (see MIL-PRF-38535, appendix A).

4. VERIFICATION

4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with MIL-PRF-38535 or as modified in the device manufacturer's Quality Management (QM) plan. The modification in the QM plan shall not effect the form, fit, or function as described herein.

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions $-55°C \le T_C \le +125°C$ unless otherwise specified		Device types	Limits		Unit
					Min	Max	
High-level output voltage	V_{OH}	V_{CC} = 4.5 V V_{IL} = 0.8 V V_{IH} = 2.0 V	I_{OH} = -400 µA	01, 02, 03	2.5		V
			I_{OH} = -1.0 mA	04, 05, 06, 07	2.4		V
Low-level output voltage	V_{OL}	V_{CC} = 4.5 V V_{IL} = 0.8 V V_{IH} = 2.0 V	I_{OL} = 4 mA	01, 02, 03		0.4	V
			I_{OL} = 12 mA	04, 05, 06, 07		0.4	V
Input clamp voltage	V_{IC}	V_{CC} = 4.5 V, I_{IN} = -18 mA T_C = +25°C		All		-1.5	V
Low-level input current at CLK or D	I_{IL1}	V_{CC} = 5.5 V, V_{IN} = 0.4 V		01	0	-200	µA
Low-level input current at J, K, or $\overline{K}$	I_{IL2}			02, 03			
Low-level input current at any input	I_{IL3}			04, 05, 06, 07			
Low level input current at $\overline{PR}$, $\overline{CLR}$	I_{IL4}	V_{CC} = 5.5 V, V_{IN} = 0.4 V		01, 02, 03	0	-400	µA
High-level input current at CLK or D	I_{IH1}	V_{CC} = 5.5 V, V_{IH} = 2.7 V		01		20	µA
High-level input current at J, K, or $\overline{K}$	I_{IH2}			02, 03			
High-level input current at any input	I_{IH3}			04, 05, 06, 07			
High level input current at $\overline{PR}$, $\overline{CLR}$	I_{IH4}			01, 02, 03		40	µA
High-level input current at CLK	I_{IH5}			02, 03		20	µA
High-level input current at CLK or D	I_{IH6}	V_{CC} = 5.5 V, V_{IN} = 7.0 V		01		100	µA
High-level input current at J, K, or $\overline{K}$	I_{IH7}			02, 03		100	µA
High-level input current at any input	I_{IH8}			04, 05, 06, 07			
High level input current at $\overline{PR}$, $\overline{CLR}$	I_{IH9}			01, 02, 03		200	µA
High-level input current at CLK	I_{IH10}			02		400	µA
				03		100	µA

See footnotes at end of table.

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions $-55°C \le T_C \le +125°C$ unless otherwise specified		Device types	Limits		Unit
					Min	Max	
Output current 1/	I_O	V_{CC} = 5.5 V V_O = 2.25 V		01, 02, 03, 04	-20	-112	mA
				05, 06, 07	-15	-110	mA
Output current, high level, outputs OFF	I_{OZH}	V_{CC} = 5.5 V V_O = 2.7 V		04, 05, 06, 07		20	µA
Output current, low level, outputs OFF	I_{OZL}	V_{CC} = 5.5 V V_O = 0.4 V		04, 05, 06, 07		-20	µA
Supply current 2/	I_{CC}	V_{CC} = 5.5 V V_{IN} = 0 V		01, 02		4.0	mA
				03		4.5	mA
Supply current, outputs high	I_{CCH}	V_{CC} = 5.5 V	V_{IN} = 5.0 V	05		17	mA
				04		18	
			V_{IN} = 0 V	06		15	
				07		21	
Supply current, outputs low	I_{CCL}	V_{CC} = 5.5 V	V_{IN} = 0 V	04		27	mA
				06		29	
			V_{IN} = 5.0 V	05		23	
				07		29	
Supply current, outputs disabled	I_{CCZ}	V_{CC} = 5.5 V V_{CC} = 5.0 V		05		27	mA
				04		28	
				06, 07		31	
Maximum clock frequency	f_{max}	V_{CC} = 5.0 V C_L = 50 pF ±10% R_L = 500Ω		01, 02, 04, 05, 06, 07	30		MHz
				03	25		
Propagation delay time low to high level, $\overline{CLR}$ or $\overline{PR}$ to output	t_{PLH1}	V_{CC} = 5.0 V C_L = 50 pF ±10% R_L = 500Ω		01, 02	3	15	ns
				03	3	20	
Propagation delay time high to low, $\overline{CLR}$ or $\overline{PR}$ to output	t_{PHL1}			01, 02	5	17	
				03	4	22	
				05, 07	6	22	
Propagation delay time low to high level, CLK to output	t_{PLH2}			01, 02	5	18	
				03	3	18	
				05, 06, 07	4	15	
				04	4	18	
Propagation delay time high to low level, CLK to output	t_{PHL2}			01, 02	5	20	
				03	5	23	
				04, 05, 06, 07	4	15	
Propagation delay time output control to low level output	t_{PZL}			04, 05, 06, 07	4	21	

See footnotes at end of table.

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions $-55°C \leq T_C \leq +125°C$ unless otherwise specified	Device types	Limits		Unit
				Min	Max	
Propagation delay time output control to high level output	t_{PZH}	V_{CC} = 5.0 V C_L = 50 pF ±10% R_L = 500Ω	04, 05, 06, 07	4	21	ns
Propagation delay time low level to output control	t_{PLZ}		05, 06, 07	3	15	
			04	2	15	
Propagation delay time high level to output control	t_{PHZ}		05, 06, 07	2	10	
			04	2	12	

1/ The output conditions have veen chosen to produce a current that closely approximates one-half of the true short-circuit output current, I_{OS}.

2/ I_{CC} is measured with outputs open with J, K, $\overline{K}$, or D, CLK and $\overline{PR}$ grounded; then with J, K, $\overline{K}$, or D, CLK and $\overline{CLR}$ grounded.

4.2 Screening. Screening shall be in accordance with MIL-PRF-38535 and shall be conducted on all devices prior to qualification and conformance inspection. The following additional criteria shall apply:

a. The burn-in test duration, test condition, and test temperature, or approved alternatives shall be as specified in the device manufacturer's QM plan in accordance with MIL-PRF-38535. The burn-in test circuit shall be maintained under document control by the device manufacturer's Technology Review Board (TRB) in accordance with MIL-PRF-38535 and shall be made available to the acquiring or preparing activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1015 of MIL-STD-883.

b. Interim and final electrical test parameters shall be as specified in table II, except interim electrical parameters test prior to burn-in is optional at the discretion of the manufacturer.

c. Additional screening for space level product shall be as specified in MIL-PRF-38535, appendix B.

TABLE II. Electrical test requirements.

MIL-PRF-38535 test requirements	Subgroups (see table III)	
	Class S devices	Class B devices
Interim electrical parameters	1	1
Final electrical test parameters	1*, 2, 3, 7*, 9, 10, 11	1*, 2, 3, 7, 9
Group A test requirements	1, 2, 3, 7, 8, 9, 10, 11	1, 2, 3, 7 9, 10, 11
Group B test when using the method 5005 QCI option	1, 2, 3, 9, 10, 11	N/A
Group C end-point electrical parameters	1, 2, 3, 9, 10, 11	1, 2, 3
Group D end-point electrical parameters	1, 2, 3	1, 2, 3

*PDA applies to subgroup 1 for class B and subgroups 1 and 7 for class S.

4.3 Qualification inspection. Qualification inspection shall be in accordance with MIL-PRF-38535.

4.4 Technology Conformance inspection (TCI). Technology conformance inspection shall be in accordance with MIL-PRF-38535 and herein for groups A, B, C, and D inspections (see 4.4.1 through 4.4.4).

4.4.1 Group A inspection. Group A inspection shall be in accordance with table III of MIL-PRF-38535 and as follows:

a. Tests shall be as specified in table II herein.

b. Subgroups 4, 5, and 6 shall be omitted.

4.4.2 Group B inspection. Group B inspection shall be in accordance with table II MIL-PRF-38535.

4.4.3 Group C inspection. Group C inspection shall be in accordance with table IV of MIL-PRF-38535 and as follows:

a. End-point electrical parameters shall be as specified in table II herein.

b. The steady-state life test duration, test condition, and test temperature, or approved alternatives shall be as specified in the device manufacturer's QM plan in accordance with MIL-PRF-38535. The burn-in test circuit shall be maintained under document control by the device manufacturer's Technology Review Board (TRB) in accordance with MIL-PRF-38535 and shall be made available to the acquiring or preparing activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1005 of MIL-STD-883.

4.4.4 Group D inspection. Group D inspection shall be in accordance with table V of MIL-PRF-38535. End-point electrical parameters shall be as specified in table II herein.

4.5 Methods of inspection. Methods of inspection shall be specified and as follows:

4.5.1 Voltage and current. All voltages given are referenced to the microcircuit ground terminal. Currents given are conventional and positive when flowing into the referenced terminal.

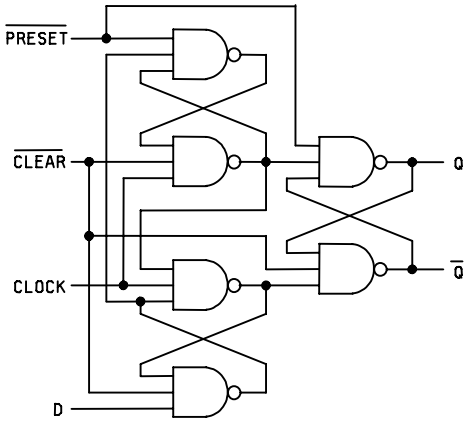
Pin number	Device type 01		Device type 02		Device type 03		Device type 04	
	CASES							
	A, B, C, and D	2	E, F	2	E, F	2	R, S	2
1	1 $\overline{CLR}$	N/C	1 $\overline{CLR}$	N/C	1CLK	N/C	$\overline{OC}$	$\overline{OC}$
2	1D	1 $\overline{CLR}$	1J	1 $\overline{CLR}$	1K	1CLK	1D	1D
3	1CLK	1D	1 $\overline{K}$	1J	1J	1K	2D	2D
4	1 $\overline{PR}$	1CLK	1CLK	1 $\overline{K}$	1 $\overline{PR}$	1J	3D	3D
5	1Q	N/C	1 $\overline{PR}$	1CLK	1Q	1 $\overline{PR}$	4D	4D
6	$\overline{1Q}$	1 $\overline{PR}$	1Q	NC	1 $\overline{Q}$	N/C	5D	5D
7	GND	N/C	$\overline{1Q}$	1 $\overline{PR}$	2 $\overline{Q}$	1Q	6D	6D
8	2 $\overline{Q}$	1Q	GND	1Q	GND	1 $\overline{Q}$	7D	7D
9	2 Q	1 $\overline{Q}$	2 $\overline{Q}$	$\overline{1Q}$	2 Q	2 $\overline{Q}$	8D	8D
10	2 $\overline{PR}$	GND	2 Q	GND	2 $\overline{PR}$	GND	GND	GND
11	2 CLK	N/C	2 $\overline{PR}$	N/C	2 J	N/C	CLK	CLK
12	2D	2 $\overline{Q}$	2CLK	2 $\overline{Q}$	2K	2Q	8Q	8Q
13	2 $\overline{CLR}$	2Q	2 $\overline{K}$	2Q	2CLK	2 $\overline{PR}$	7Q	7Q
14	V_{CC}	2 $\overline{PR}$	2J	2 $\overline{PR}$	2 $\overline{CLR}$	2J	6Q	6Q
15		N/C	2 $\overline{CLR}$	2CLK	1 $\overline{CLR}$	2K	5Q	5Q
16		2 CLK	V_{CC}	N/C	V_{CC}	N/C	4Q	4Q
17		N/C		2 $\overline{K}$		2CLK	3Q	3Q
18		2 D		2 J		2 $\overline{CLR}$	2Q	2Q
19		2 $\overline{CLR}$		2 $\overline{CLR}$		1 $\overline{CLR}$	1Q	1Q
20		V_{CC}		V_{CC}		V_{CC}	V_{CC}	V_{CC}

FIGURE 1. Terminal connections.

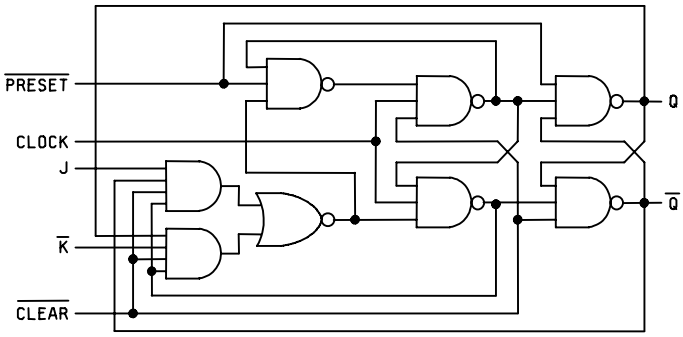
Pin number	Device type 05		Device type 06		Device type 07	
	CASES					
	R, S	2	L, K	3	L,K	3
1	$\overline{OC}$	$\overline{OC}$	1 $\overline{CLR}$	N/C	1 $\overline{PR}$	N/C
2	1D	1D	1 $\overline{OC}$	1 $\overline{CLR}$	1 $\overline{OC}$	1 $\overline{PR}$
3	2D	2D	1D1	1 $\overline{OC}$	1D1	1 $\overline{OC}$
4	3D	3D	1D2	1D1	1D2	1D1
5	4D	4D	1D3	1D2	1D3	1D2
6	5D	5D	1D4	1D3	1D4	1D3
7	6D	6D	2D1	1D4	2D1	1D4
8	7D	7D	2D2	N/C	2D2	N/C
9	8D	8D	2D3	2D1	2D3	2D1
10	GND	GND	2D4	2D2	2D4	2D2
11	CLK	CLK	2 $\overline{OC}$	2D3	2 $\overline{OC}$	2D3
12	8 $\overline{Q}$	8 $\overline{Q}$	GND	2D4	GND	2D4
13	7 $\overline{Q}$	7 $\overline{Q}$	2 $\overline{CLR}$	2 $\overline{OC}$	2 $\overline{PR}$	2 $\overline{OC}$
14	6 $\overline{Q}$	6 $\overline{Q}$	2CLK	GND	2CLK	GND
15	5 $\overline{Q}$	5 $\overline{Q}$	2Q4	N/C	2 $\overline{Q}$ 4	N/C
16	4 $\overline{Q}$	4 $\overline{Q}$	2Q3	2 $\overline{CLR}$	2 $\overline{Q}$ 3	2 $\overline{PR}$
17	3 $\overline{Q}$	3 $\overline{Q}$	2Q2	2CLK	2 $\overline{Q}$ 2	2CLK
18	2 $\overline{Q}$	2 $\overline{Q}$	2Q1	2Q4	2 $\overline{Q}$ 1	2 $\overline{Q}$ 4
19	1 $\overline{Q}$	1 $\overline{Q}$	1Q4	2Q3	1 $\overline{Q}$ 4	2 $\overline{Q}$ 3
20	V_{CC}	V_{CC}	1Q3	2Q2	1 $\overline{Q}$ 3	2 $\overline{Q}$ 2
21			1Q2	2Q1	1 $\overline{Q}$ 2	2 $\overline{Q}$ 1
22			1Q1	N/C	1 $\overline{Q}$ 1	N/C
23			1CLK	1Q4	1CLK	1 $\overline{Q}$ 4
24			V_{CC}	1Q3	V_{CC}	1 $\overline{Q}$ 3
25				1Q2		1 $\overline{Q}$ 2
26				1Q1		1 $\overline{Q}$ 1
27				1CLK		1CLK
28				V_{CC}		V_{CC}

FIGURE 1. Terminal connections - Continued.

DEVICE TYPE 01



DEVICE TYPE 02



DEVICE TYPE 03

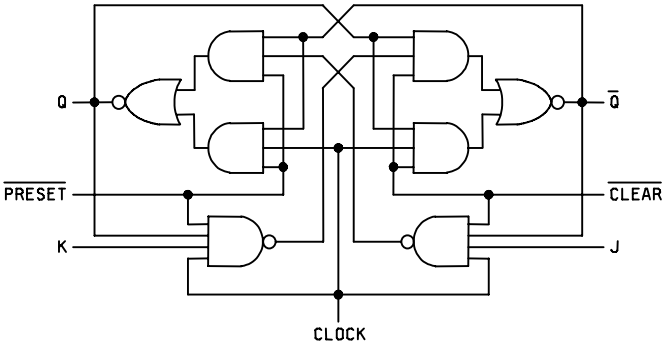


FIGURE 2. Logic diagrams.

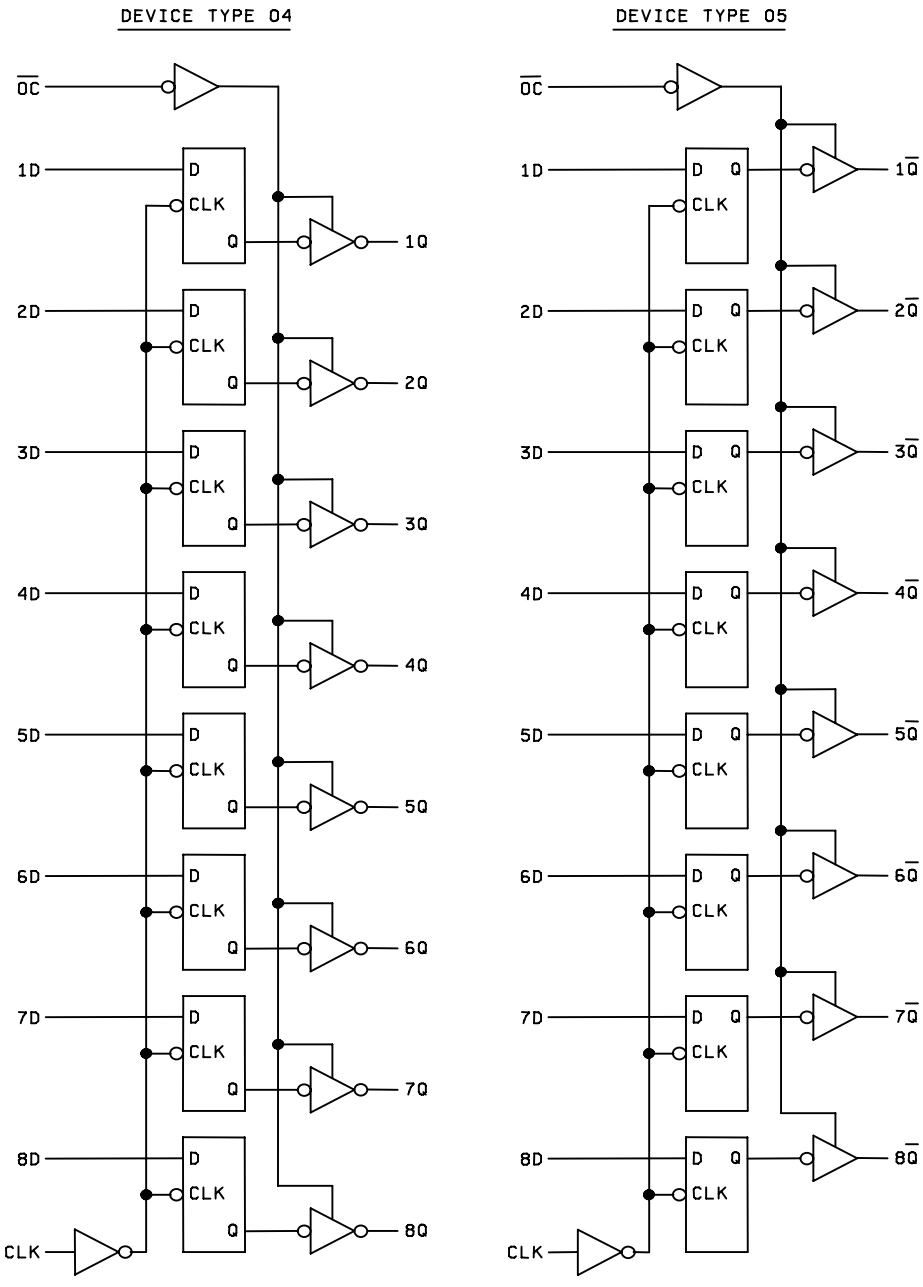


FIGURE 2. Logic diagrams – Continued.

DEVICE TYPE 06

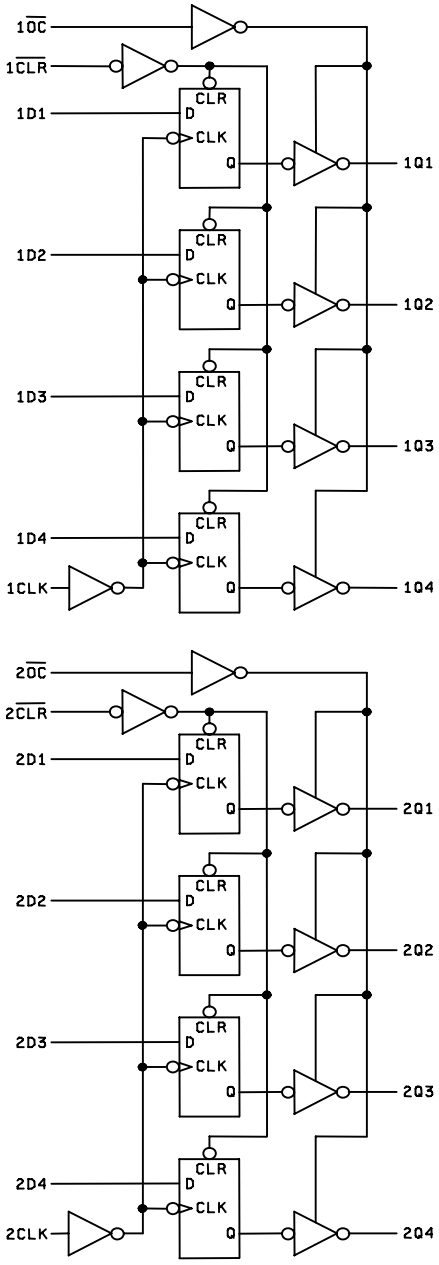


FIGURE 2. Logic diagrams – Continued.

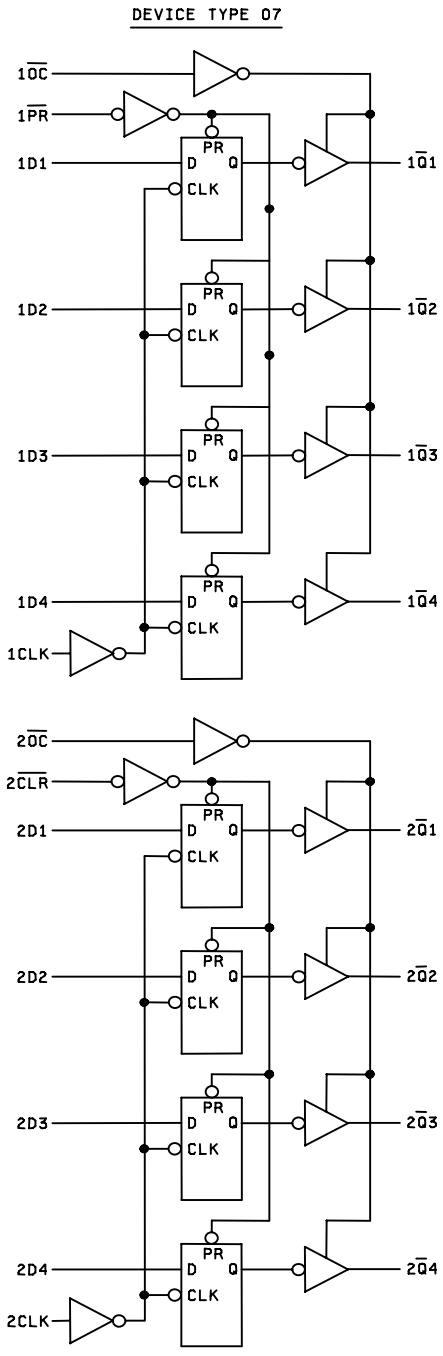


FIGURE 2. Logic diagrams – Continued.

Device type 01

INPUTS				OUTPUTS	
$\overline{\text{PRESET}}$	$\overline{\text{CLEAR}}$	CLOCK	D	Q	$\overline{Q}$
L	H	X	X	H	L
H	L	X	X	L	H
L	L	X	X	H*	H*
H	H	↑	H	H	L
H	H	↑	L	L	H
H	H	L	X	Q_0	$\overline{Q}_0$

H = High level (steady state).
L = Low level (steady state).
X = Irrelevant
↑ = Transition from low to high level
Q_0= The level of Q before the incicated steady state input conditions were established.
*This configuration is nonstable; that is it will not persist when preset and clear inputs return to their inactive (high) level.

Device type 02

INPUTS					OUTPUTS	
$\overline{\text{PRESET}}$	$\overline{\text{CLEAR}}$	CLOCK	J	$\overline{K}$	Q	$\overline{Q}$
L	H	X	X	X	H	L
H	L	X	X	X	L	H
L	L	X	X	X	H*	H*
H	H	↑	L	L	L	H
H	H	↑	H	L	TOGGLE	
H	H	↑	L	H	Q_0	$\overline{Q}_0$
H	H	↑	H	H	H	L
H	H	L	X	X	Q_0	$\overline{Q}_0$

H = High level (steady state)
L = Low level (steady state)
X = Irrelevant
↑ = Transition from low to high level
Q_0= The level of Q before the indicated steady state input conditions were established.
TOGGLE: Each output changes to the complement of its Previous level on each ↑ clock transition.
*This configuration is nonstable; that is, it will not persist when preset and clear inputs return to their inactive (high) level.

FIGURE 3. Truth tables.

Device type 03

INPUTS					OUTPUTS	
$\overline{\text{PRESET}}$	$\overline{\text{CLEAR}}$	CLOCK	J	K	Q	$\overline{Q}$
L	H	X	X	X	H	L
H	L	X	X	X	L	H
L	L	X	X	X	H*	H*
H	H	↓	L	L	Q_0	$\overline{Q}_0$
H	H	↓	L	H	L	H
H	H	↓	H	L	H	L
H	H	↓	H	H	TOGGLE	
H	H	H	X	X	Q_0	$\overline{Q}_0$

H = High level (steady state)
L = Low level (steady state)
X = Irrelevant
↓= Tansition from high to low level
Q_0= The level of Q before the indicated steady state input conditions were established.
TOGGLE: Each output changes to the complement of its Previous level on each ↓ clock transition.
*This configuration is nonstable; that is, it will not persist when preset and clear inputs return to their inactive (high) level.

Device type 04

OUTPUT CONTROL	CLOCK	D	OUTPUT Q
L	↑	H	H
L	↑	L	L
L	L	X	Q_0
H	X	X	Z

H = High level (steady state)
L = Low level (steady state)
X = Irrelevent
↑= Transition from low to high level
Q_0= The level of Q before the indicated steady State input conditions were established.
Z = High Impedance state

FIGURE 3. Truth tables – Continued.

Device type 05

OUTPUT CONTROL	CLOCK	D	OUTPUT $\overline{Q}$
L	↑	H	L
L	↑	L	H
L	L	X	$\overline{Q}_0$
H	X	X	Z

H = High level (steady state)
L = Low level (steady state)
X = Irrelevent
↑ = Transition from low to high level
$\overline{Q}_0$ = The level of $\overline{Q}$ before the indicated steady state input conditions were established.
Z = High Impedance state

Device type 06

CLEAR	DATA	CLOCK	OUTPUT CONTROL	OUTPUT
$\overline{CLR}$	D	CLK	$\overline{OC}$	Q
X	X	X	H	Z
L	X	X	L	L
H	H	↑	L	H
H	L	↑	L	L
H	X	L	L	Q_0

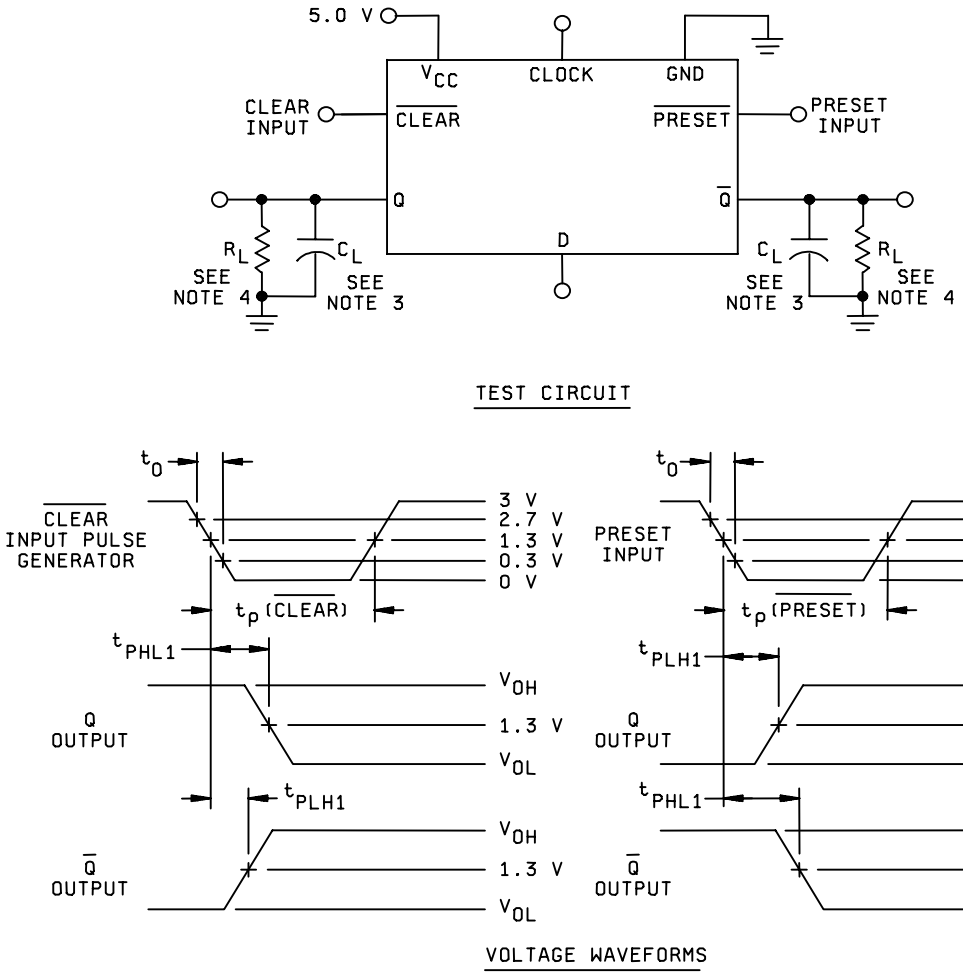
H = High level (steady state)
L = Low level (steady state)
X = Irrelevent
↑ = Transition from low to high level
Q_0 = The level of Q before the indicated steady state input conditions were established.
Z = High Impedance state

Device type 07

PRESET	DATA	CLOCK	OUTPUT CONTROL	OUTPUT
$\overline{PR}$	D	CLK	$\overline{OC}$	$\overline{Q}$
X	X	X	H	Z
L	X	X	L	L
H	H	↑	L	L
H	L	↑	L	H
H	X	L	L	$\overline{Q}_0$

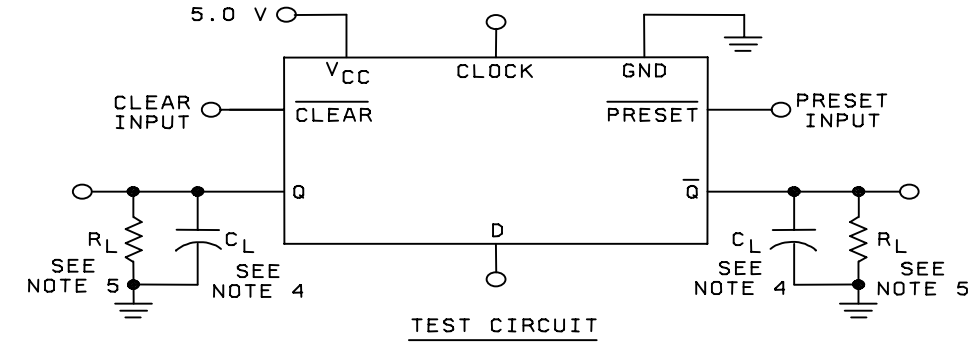
H = High level (steady state)
L = Low level (steady state)
X = Irrelevent
↑ = Transition from low to high level
$\overline{Q}_0$ = The level of $\overline{Q}$ before the indicated steady state input conditions were established.
Z = High Impedance state

FIGURE 3. Truth tables – Continued.

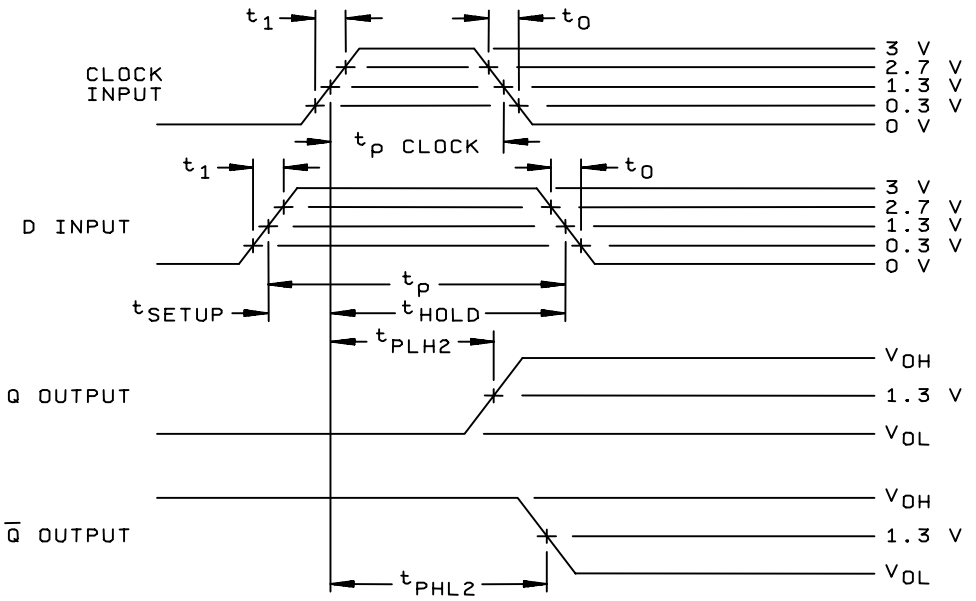


NOTES:
1. Clear and preset inputs dominate regardless of the state of clock or D inputs.
2. Clear or preset input pulse charactersistics: t_p ($\overline{\text{clear}}$) = 15 ns; t_p ($\overline{\text{preset}}$) = 15 ns; and PRR ≤ 1 MHz; t_0 = 6 ±1.5 ns.
3. C_L = 50 pF ±10% (including jug and probe capacitance without package in test fixture).
4. R_L = 499Ω ±1%.
5. When testing clear to output switching, preset input shall have a logical “1” voltage applied. When testing preset to output switching, clear input shall have a logical “1” voltage applied (see table III).
6. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 4. Clear and preset switching test circuit and waveforms (device type 01).



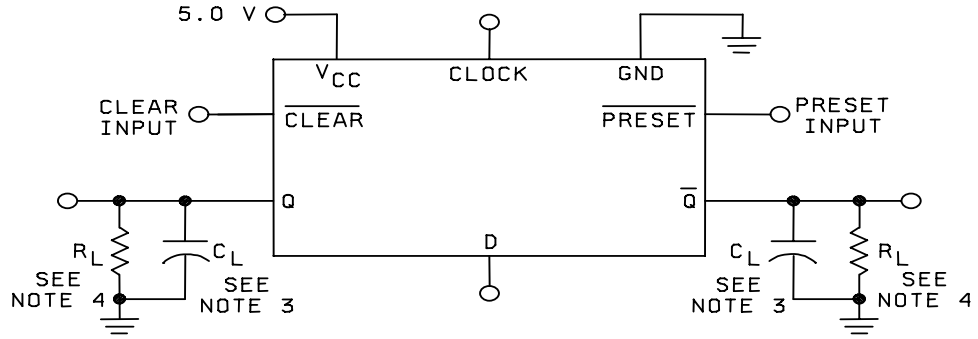
TEST CIRCUIT



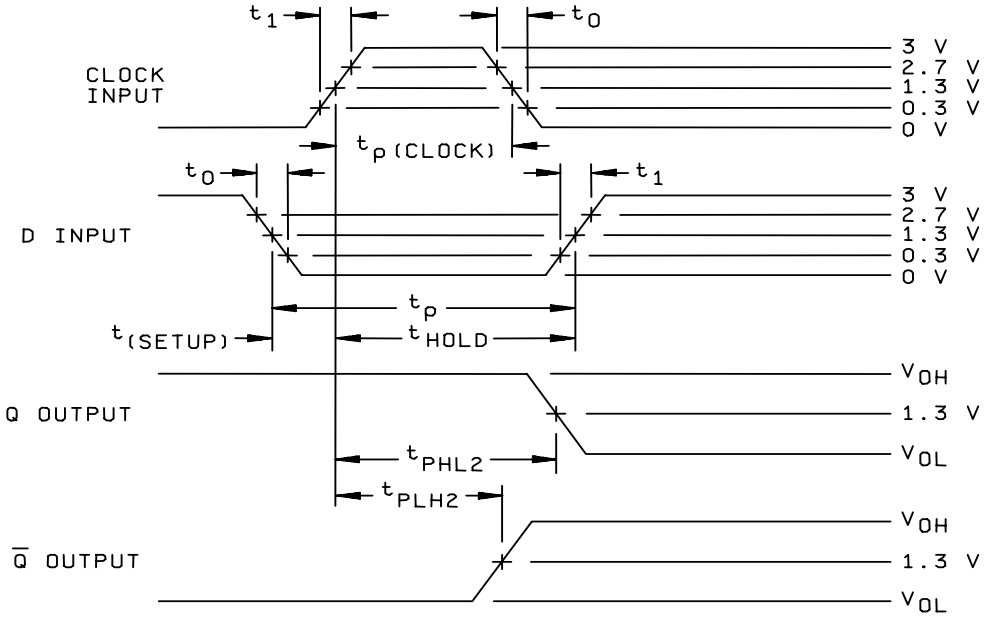
VOLTAGE WAVEFORM

NOTES:
1. Clock input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; t_p (clock) = 16.5 ns; PRR ≤ 1 MHz.
2. D input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$; t_{setup} = 15 ns; t_{hold} = 2 ns; t_p = 17 ns; PRR is 50% on the clock PRR.
3. For f_{MAX}, the clock input pulse characteristics are as follows: $t_1 = t_0 \leq 3$ ns; t_p (clock) = 16.5 ns; PRR = 30 MHz. The D input pulse shall be one-half of the frequency of the clock and the D ↑ and ↓ shall be coincident with the clock ↓. $t_1 = t_0 = 6 \pm 1.5$ ns.
4. C_L = 50 pF ±10% (including jig and probe capacitance without package in test fixture).
5. R_L = 499Ω ±1%.
6. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 4. Synchronous switching test circuit (high-level data) device type 01.



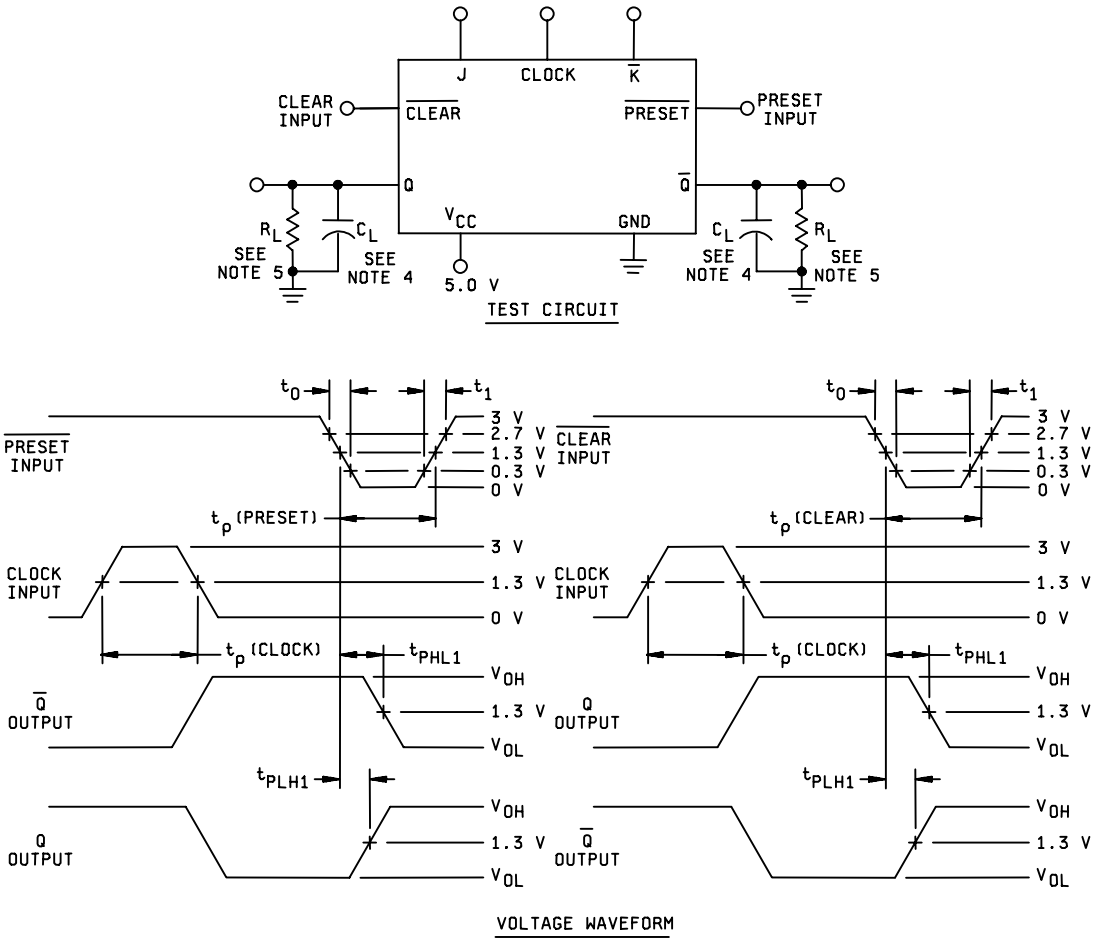
TEST CIRCUIT



VOLTAGE WAVEFORM

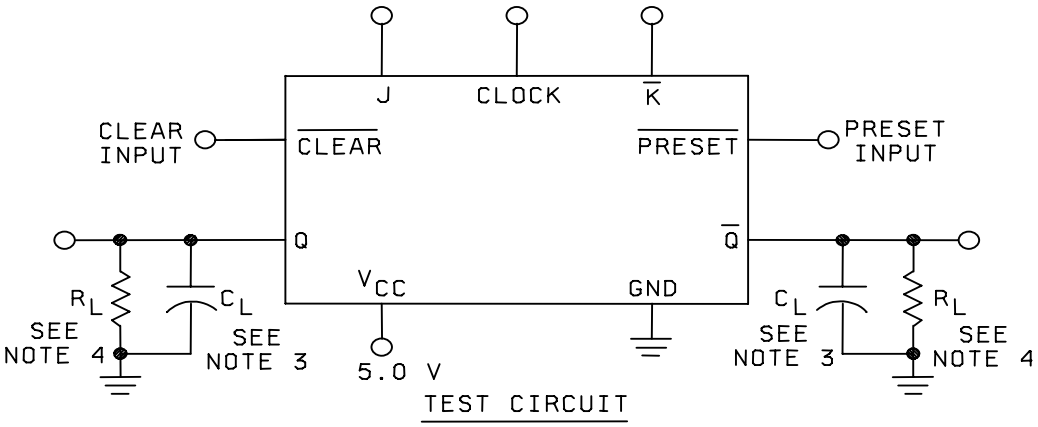
NOTES:
1. Clock input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; t_p (clock) = 16.5 ns; PRR = 1 MHz.
2. D input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$; t_{setup} = 15 ns; t_{hold} = 2 ns; t_p = 17 ns; PRR is 50% of the clock PRR.
3. C_L = 50 pF ±10% (including jig and probe capacitance without package in test fixture).
4. R_L = 499Ω ±1%.
5. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 4. Synchronous switching test circuit (low-level data) (device type 01).

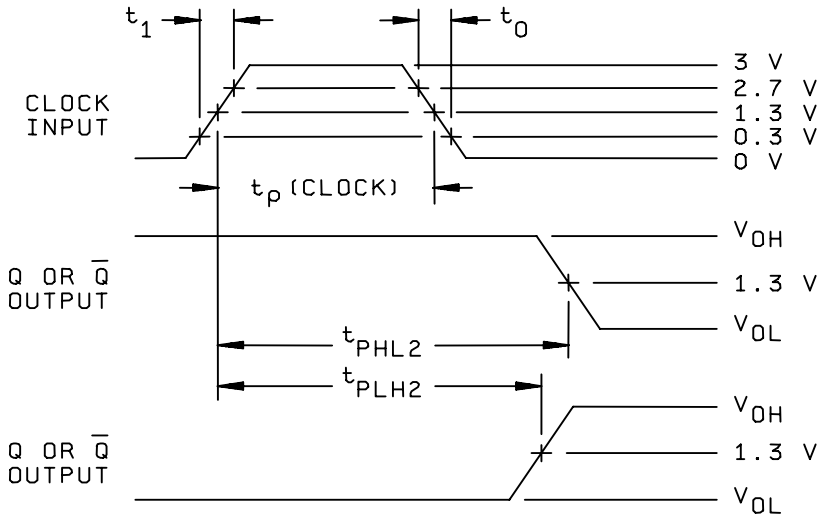


1. Clear and preset inputs dominate regardless of the state of clock or J-K inputs.
2. Clear and preset input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; t_p ($\overline{\text{clear}}$) = 15 ns; t_p ($\overline{\text{preset}}$) = 15 ns; and PRR ≤ 1 MHz.
3. t_p (clock) = 16.5 ns min; PRR = same as clear and preset.
4. C_L = 50 pF ±10% (including jig and probe capacitance without package in test fixture).
5. R_L = 499Ω ±1%.
6. When testing clear to output switching, preset input shall have a logical “1” voltage applied. When testing preset to output switching, clear input shall have a logical “1” voltage applied (see table III).
7. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 4. Clear and preset switching test circuit and waveforms (device type 02).



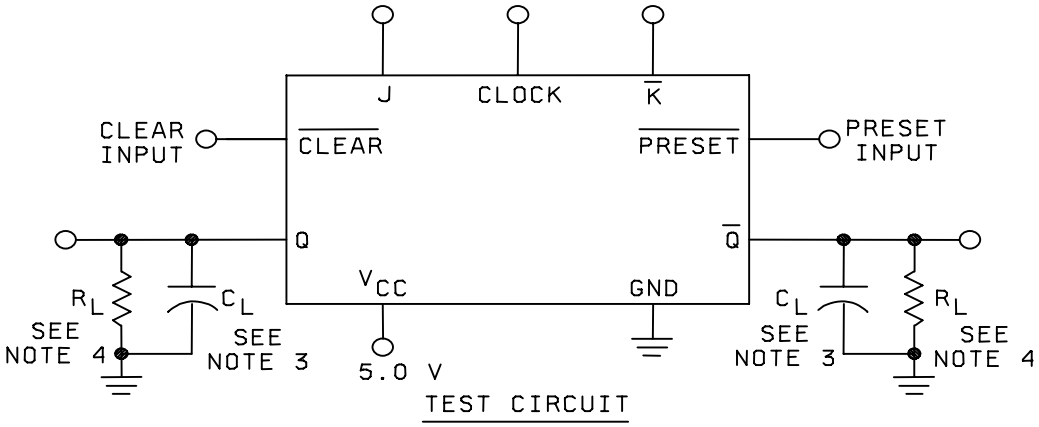
TEST CIRCUIT



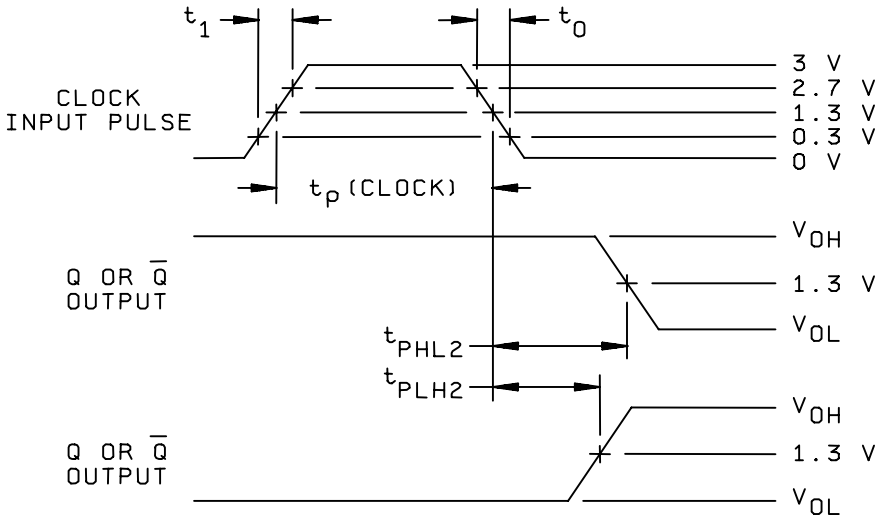
VOLTAGE WAVEFORMS

NOTES:
1. Clock input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; t_p (clock) = 16.5 ns; PRR = 1 MHz.
2. For f_{MAX}, the clock input pulse characteristics are as follows:
   $t_1 = t_0 \leq 3$ ns; t_p (clock) = 16.5 ns; PRR = 30 MHz.
3. C_L = 50 pF ±10% (including jig and probe capacitance without package in test fixture).
4. R_L = 499Ω ±1%.
5. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 4. Synchronous switching test circuit (device type 02).



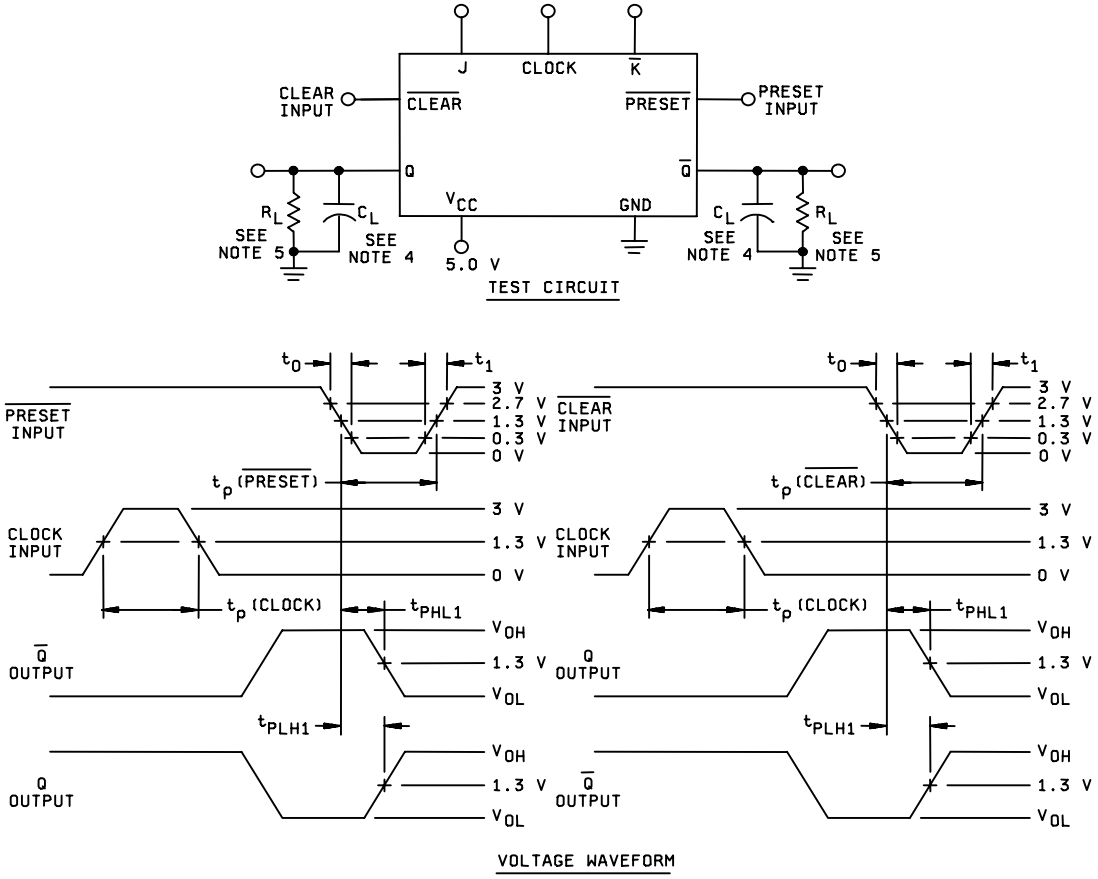
TEST CIRCUIT



VOLTAGE WAVEFORMS

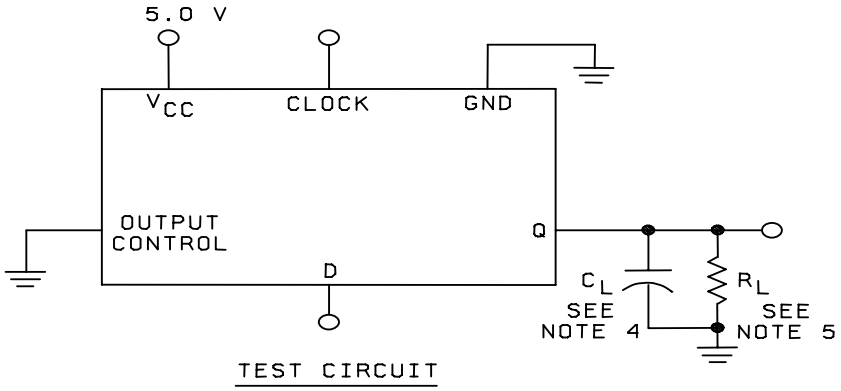
NOTES:
1. Clock input pulse characteristics: $t_1 = t_0 \leq 6 \pm 1.5$ ns; t_p (clock) = 20 ns; PRR = 1 MHz.
2. For f_{MAX}, the clock input pulse characteristics are as follows:
   $t_1 = t_0 \leq 3$ ns; t_p (clock) = 20 ns; PRR = 25 MHz.
3. C_L = 50 pF ±10% (including jig and probe capacitance without package in test fixture).
4. R_L = 499Ω ±1%.
5. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 4. Synchronous switching test circuit (device type 03).

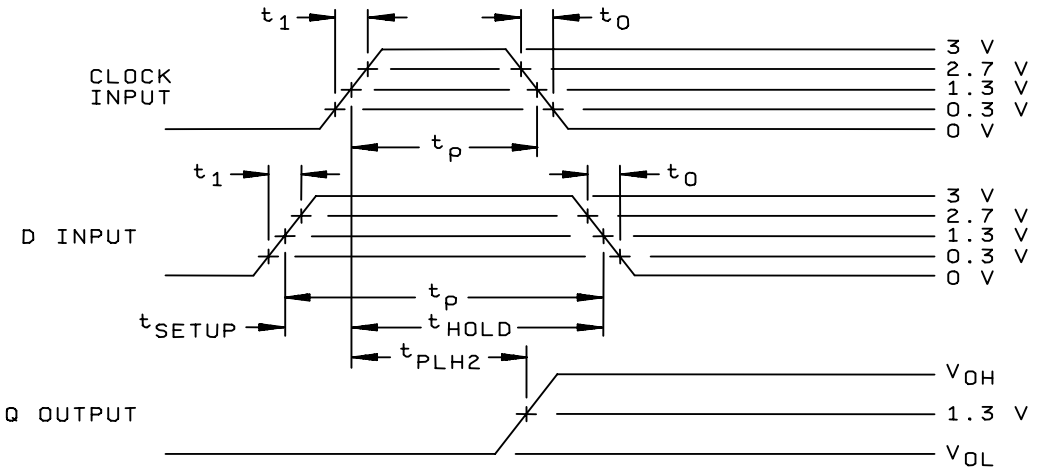


1. Clear and preset inputs dominate regardless of the state of clock or J-K inputs.
2. Clear and preset input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; t_p ($\overline{\text{clear}}$) = 15 ns; t_p ($\overline{\text{preset}}$) = 15 ns; and PRR ≤ 1 MHz.
3. t_p (clock) = 20 ns minimum; PRR = clear or preset PRR.
4. C_L = 50 pF ±10% (including jig and probe capacitance without package in test fixture).
5. R_L = 499Ω ±1%.
6. When testing clear to output switching, present inputs shall have a logical “1” voltage applied. When testing preset to output switching, clear input shall have a logical “1” voltage applied (see table III).

FIGURE 4. Clear and preset switching test circuit and waveforms (device type 03).



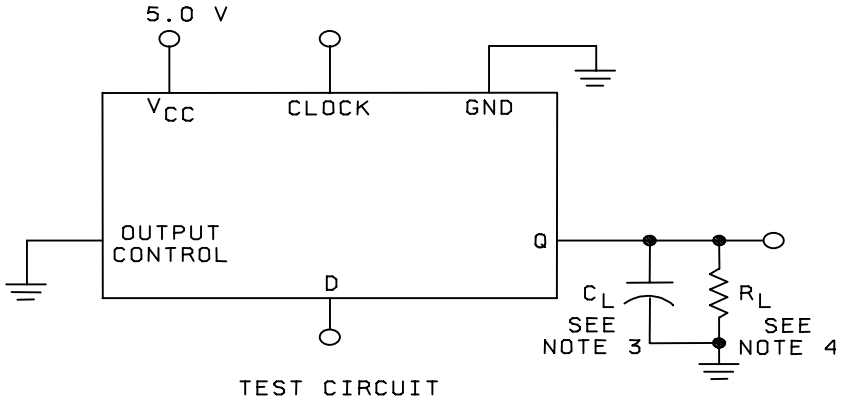
TEST CIRCUIT



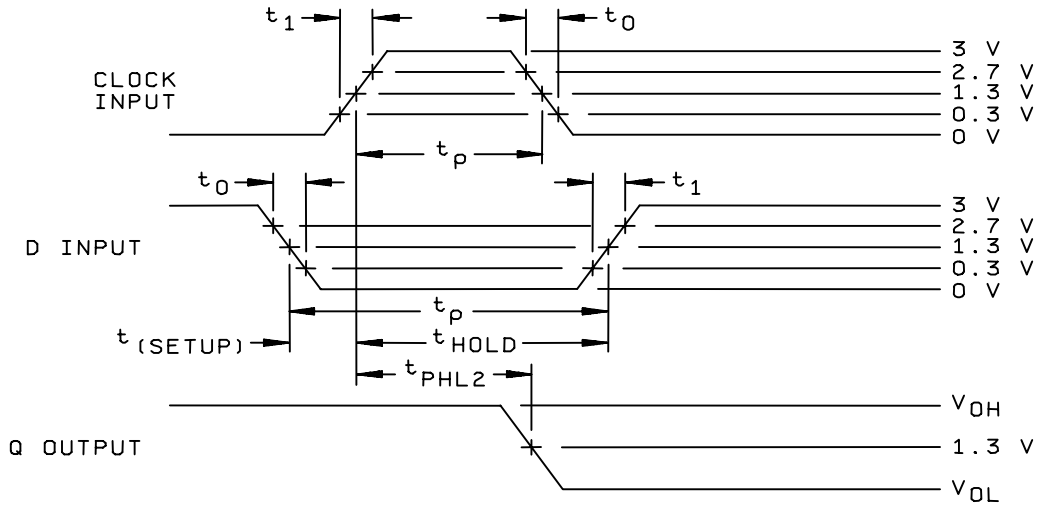
VOLTAGE WAVEFORM

NOTES:
1. Clock input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; t_p (clock) = 16.5 ns; PRR ≤ 1 MHz.
2. D input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$; t_{setup} = 15 ns; t_{hold} = 4 ns; t_p = 19 ns; PRR is 50% of the clock PRR.
3. For f_{MAX}, the clock input pulse characteristics are as follows:
   $t_1 = t_0 \leq 3$ ns; t_p (clock) = 16.5 ns; PRR = 30 MHz.
   The D input pulse shall be one-half of the frequency of the clock and the D ↑ and ↓ shall be coincident with the clock ↓. $t_1 = t_0 = 6 \pm 1.5$ ns.
4. C_L = 50 pF ±10% (including jig and probe capacitance without package in test fixture).
5. R_L = 499Ω ±1%.
6. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 4. Synchronous switching test circuit (high level data) (device type 04).



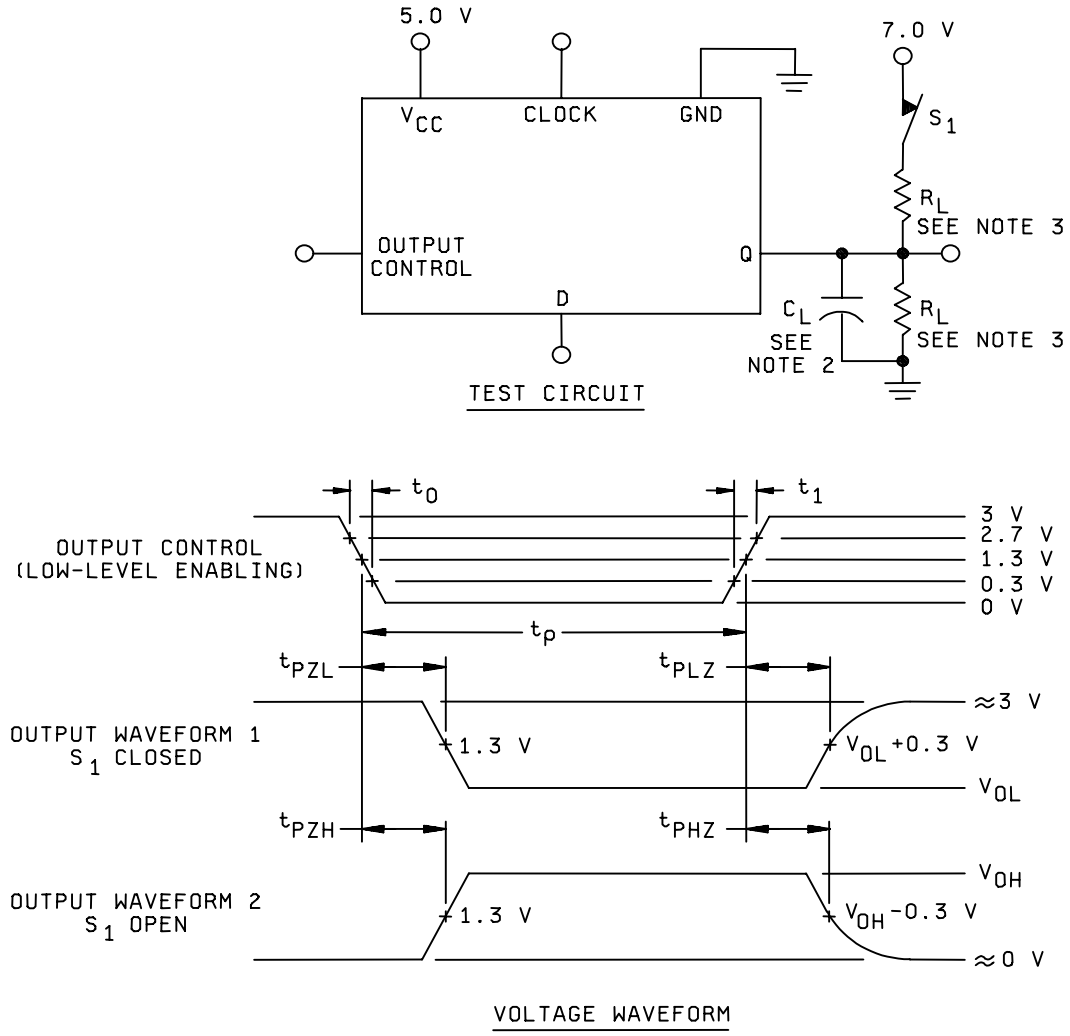
TEST CIRCUIT



VOLTAGE WAVEFORM

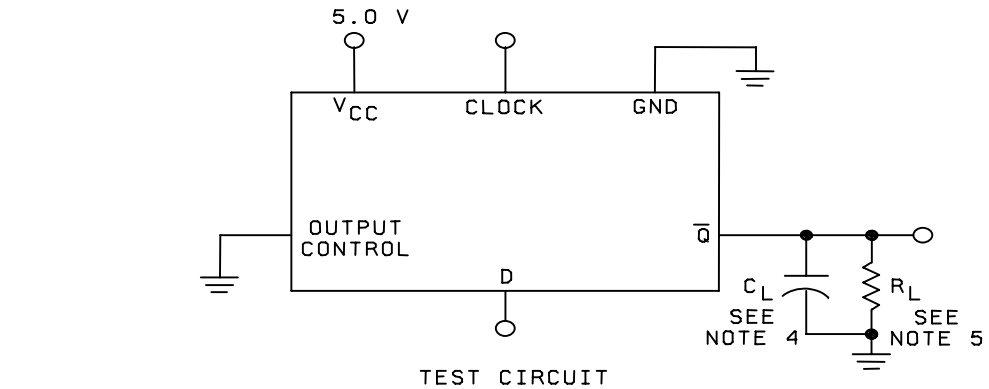
NOTES:
1. Clock input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; t_p (clock) = 16.5 ns; PRR = 1 MHz.
2. D input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$; t_{setup} = 15 ns; t_{hold} = 4 ns; t_p = 19 ns.
3. C_L = 50 pF ±10% (including jig and probe capacitance without package in test fixture).
4. R_L = 499Ω ±1%.
5. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 4. Synchronous switching test circuit (low-level data) (device type 04).

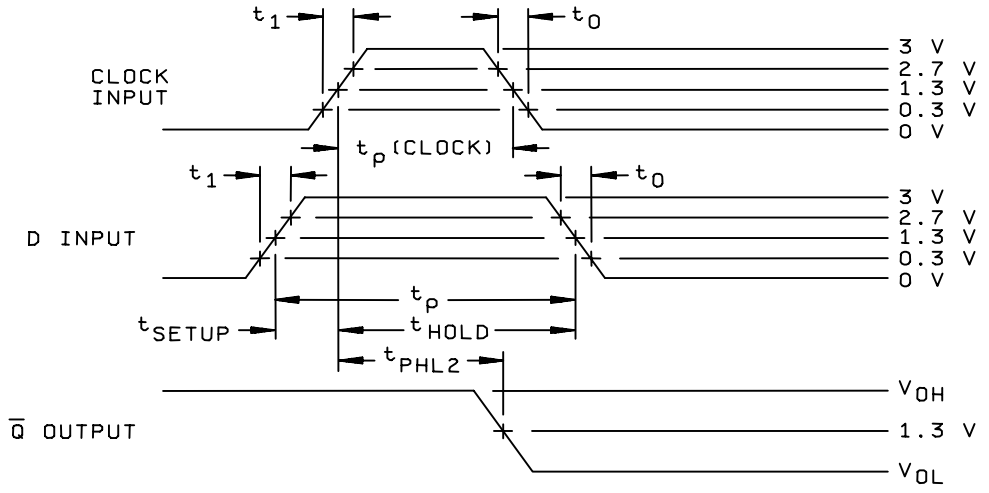


1. Output control characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; $t_p \geq 200$ ns; PRR ≤ 1 MHz.
2. $C_L = 50$ pF ±10% (including jig and probe capacitance without package in test fixture).
3. $R_L = 499\Omega \pm 1\%$.
4. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 4. Tri-state switching test circuit (device type 04).



TEST CIRCUIT

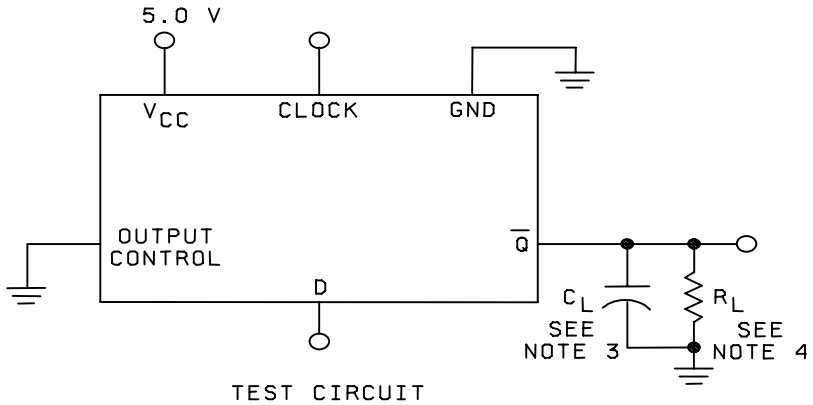


VOLTAGE WAVEFORM

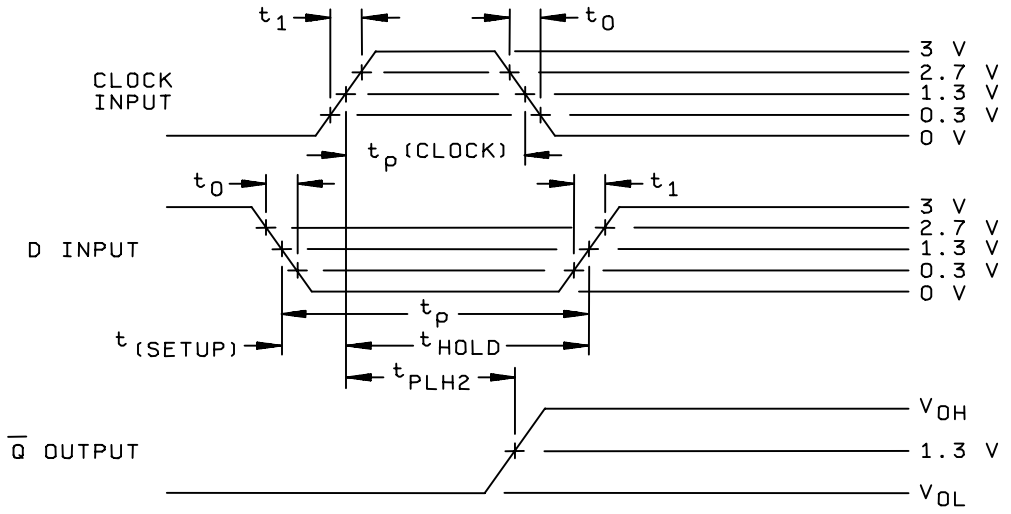
NOTES:

1. Clock input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; t_p (clock) = 16.5 ns; PRR ≤ 1 MHz.
2. D input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$; t_{setup} = 15 ns; t_{hold} = 4 ns; t_p = 19 ns; PRR is 50% of the clock PRR.
3. For f_{MAX}, the clock input pulse characteristics are as follows: $t_1 = t_0 \leq 3$ ns; t_p (clock) = 16.5 ns; PRR = 30 MHz. The D input pulse shall be one-half of the frequency of the clock and the D ↑ and ↓ shall be coincident with the clock ↓. $t_1 = t_0 = 6 \pm 1.5$ ns.
4. C_L = 50 pF ±10% (including jig and probe capacitance without package in test fixture).
5. R_L = 499Ω ±1%.
6. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 4. Synchronous switching test circuit (high-level data) (device type 05).



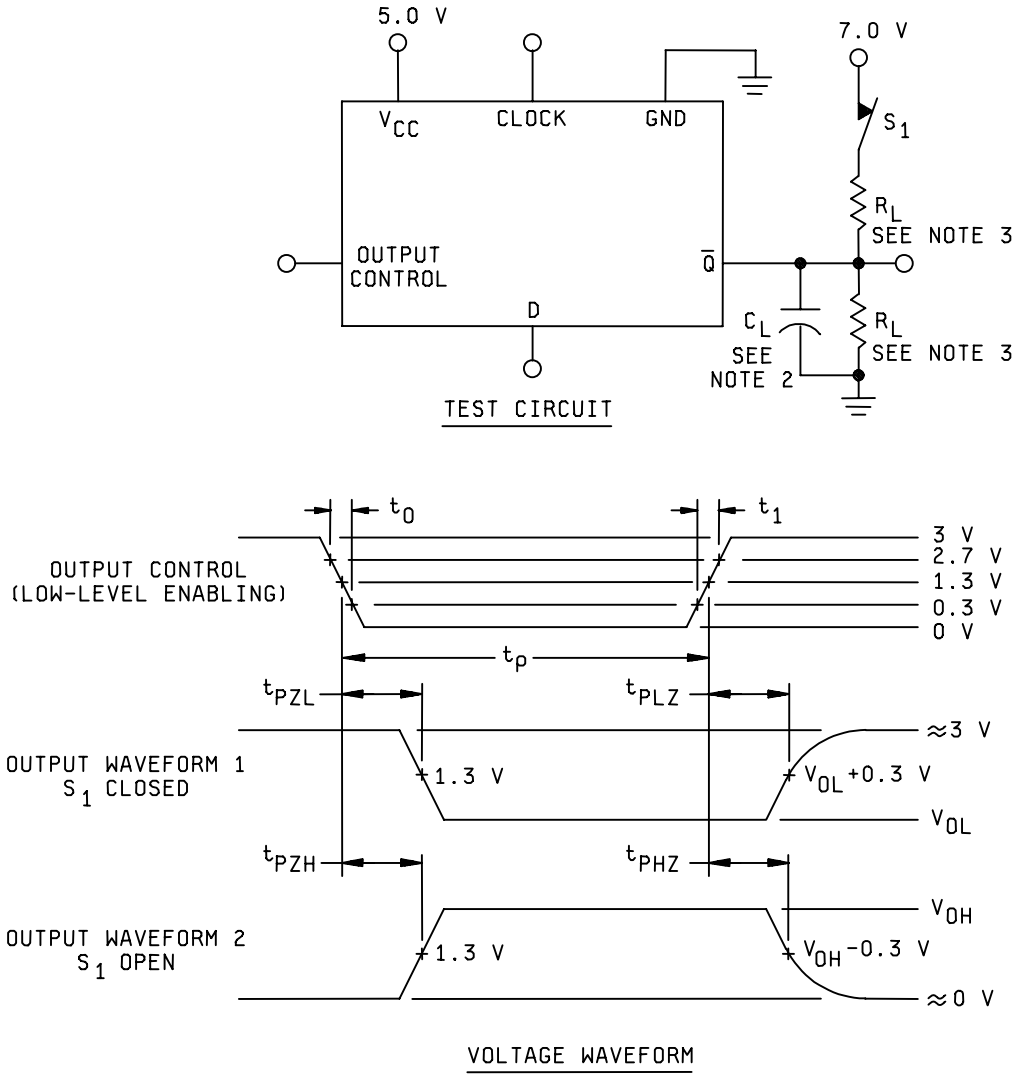
TEST CIRCUIT



VOLTAGE WAVEFORM

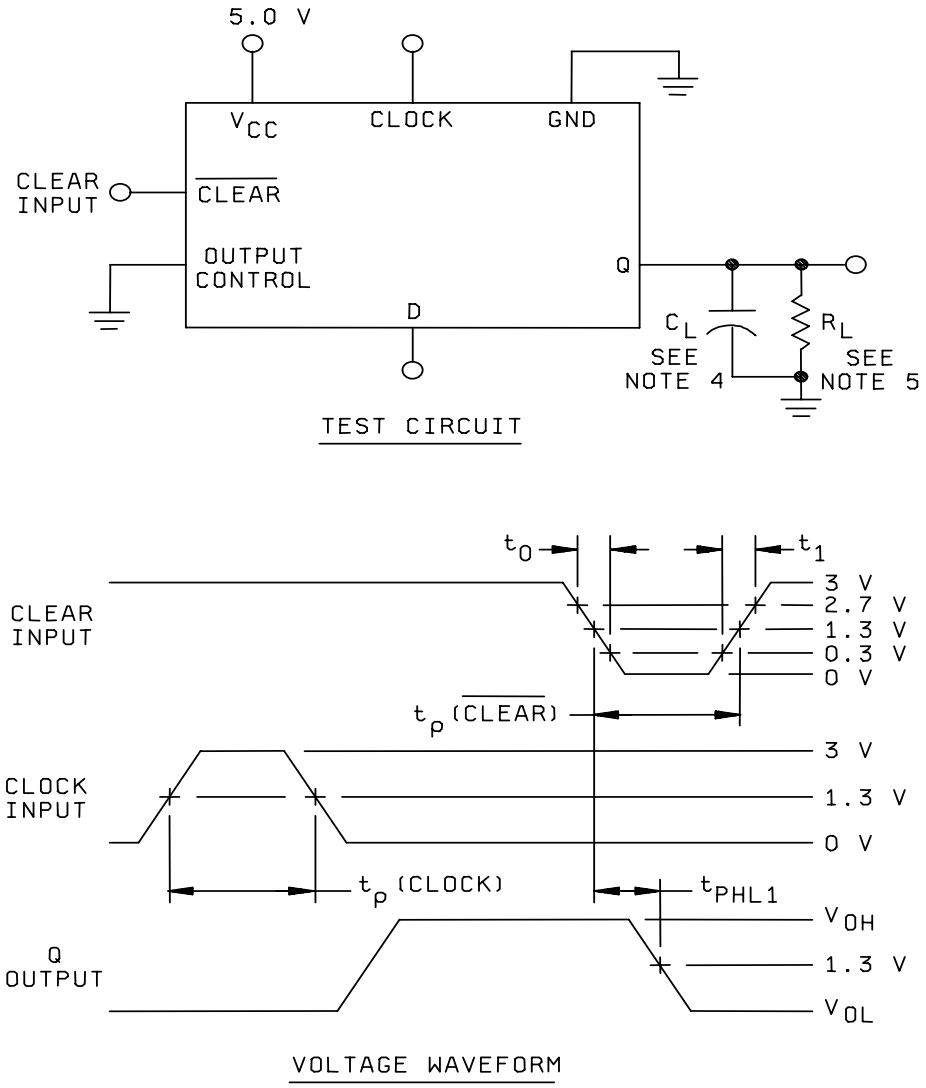
NOTES:
1. Clock input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; t_p (clock) = 16.5 ns; PRR ≤ 1 MHz.
2. D input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; t_{setup} = 15 ns; t_{hold} = 4 ns; t_p = 19 ns; PRR is 50% of the clock PRR.
3. C_L = 50 pF ±10% (including jig and probe capacitance without package in test fixture).
4. R_L = 499Ω ±1%.
5. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 4. Synchronous switching test circuit (low-level data) (device type 05).



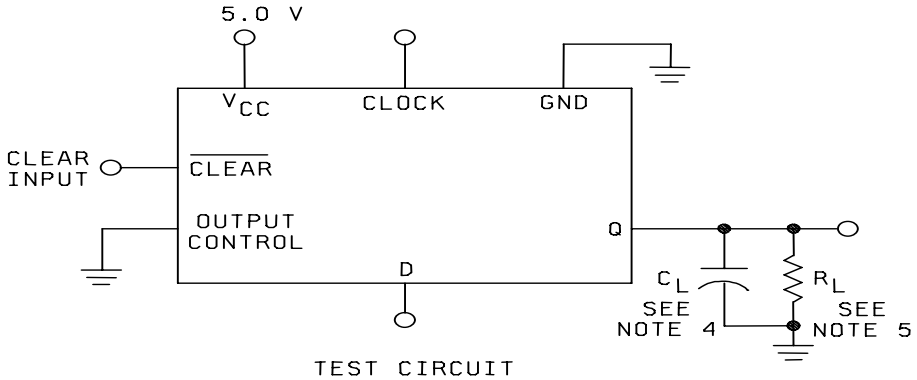
NOTES:
1. Output control characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; $t_p \geq 200$ ns; PRR ≤ 1 MHz.
2. $C_L = 50$ pF ±10% (including jig and probe capacitance without package in test fixture).
3. $R_L = 499\Omega \pm 5\%$.
4. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 4. Tri-state switching test circuit (device type 05)

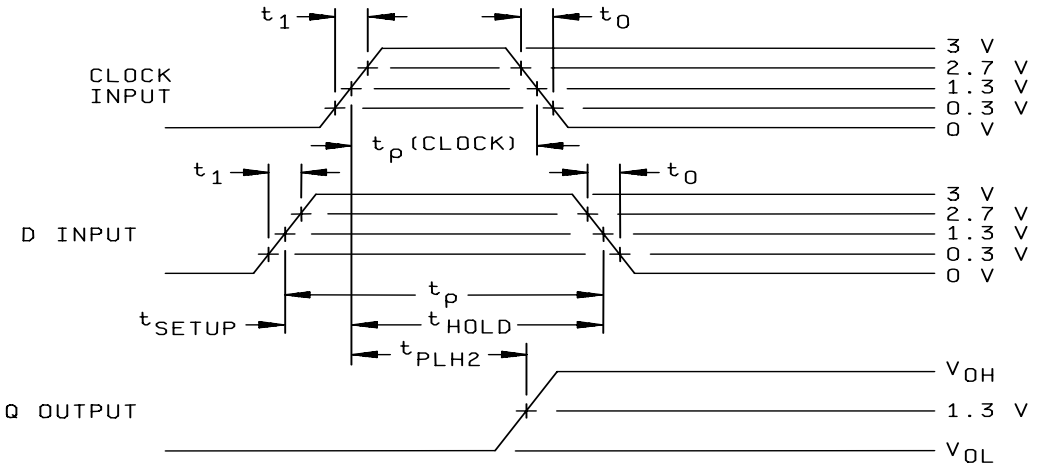


NOTES:
1. Clear inputs dominate regardless of the state of clock or D inputs.
2. Clear input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; t_p (clear) = 10 ns; PRR ≤ 1 MHz.
3. t_p (clock) = 16.5 ns minimum; PRR = clear PRR.
4. C_L = 50 pF ±10% (including jig and probe capacitance without package in test fixture).
5. R_L = 499Ω ±1%.
6. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 4. Clear switching test circuit and waveforms (device type 06).



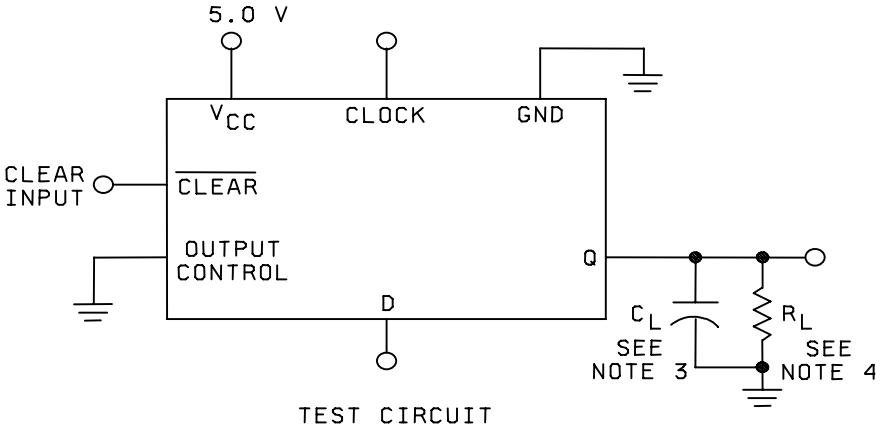
TEST CIRCUIT



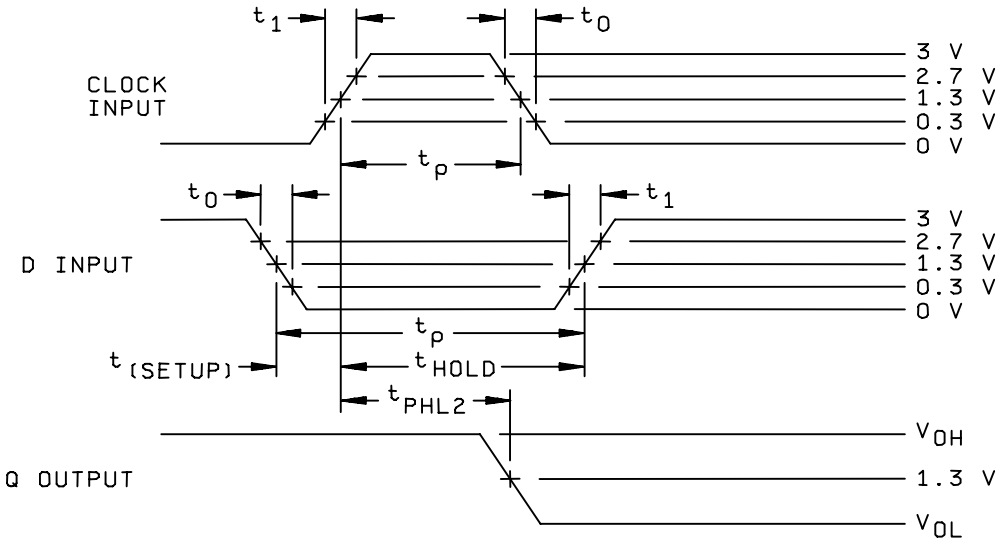
VOLTAGE WAVEFORM

NOTES:
1. Clock input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; t_p (clock) = 16.5 ns; PRR ≤ 1 MHz.
2. D input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; t_{setup} = 15 ns; t_{hold} = 4 ns; t_p = 19 ns; PRR is 50% of the clock PRR.
3. For f_{MAX}, the clock input pulse characteristics are as follows:
   $t_1 = t_0 \leq 3$ ns; t_p (clock) = 16.5 ns; PRR = 30 MHz.
   The D input pulse shall be one-half of the frequency of the clock and the D ↑ and ↓ shall be coincident with the clock ↓. $t_1 = t_0 = 6 \pm 1.5$ ns.
4. C_L = 50 pF ±10% (including jig and probe capacitance without package in test fixture).
5. R_L = 499Ω ±1%.
6. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 4. Synchronous switching test circuit (high-level data) (device type 06).



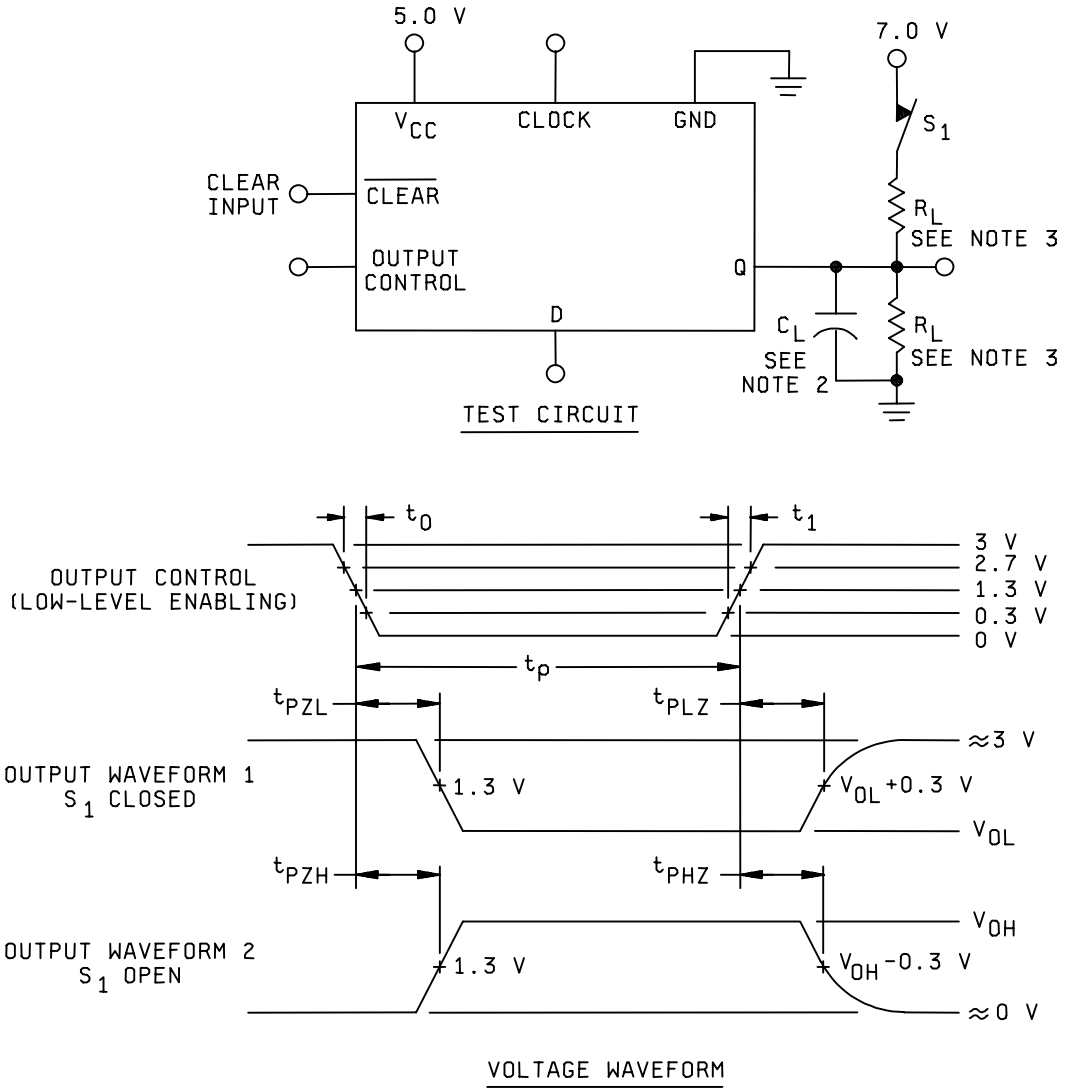
TEST CIRCUIT



VOLTAGE WAVEFORM

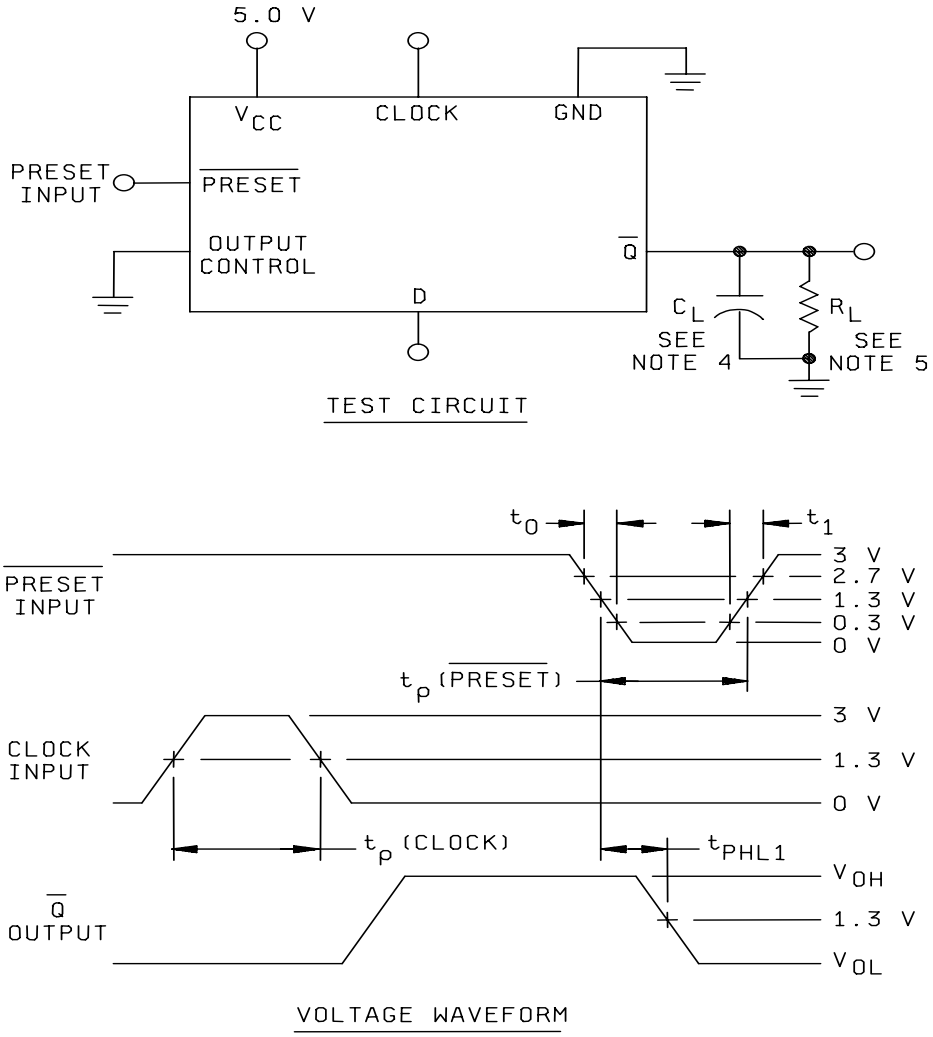
NOTES:
1. Clock input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; t_p (clock) = 16.5 ns; PRR ≤ 1 MHz.
2. D input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; t_{setup} = 15 ns; t_{hold} = 4 ns; t_p = 19 ns; PRR is 50% of the clock PRR.
3. C_L = 50 pF ±10% (including jig and probe capacitance without package in test fixture).
4. R_L = 499Ω ±1%.
5. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 4. Synchronous switching test circuit (low-level data) (device type 06).



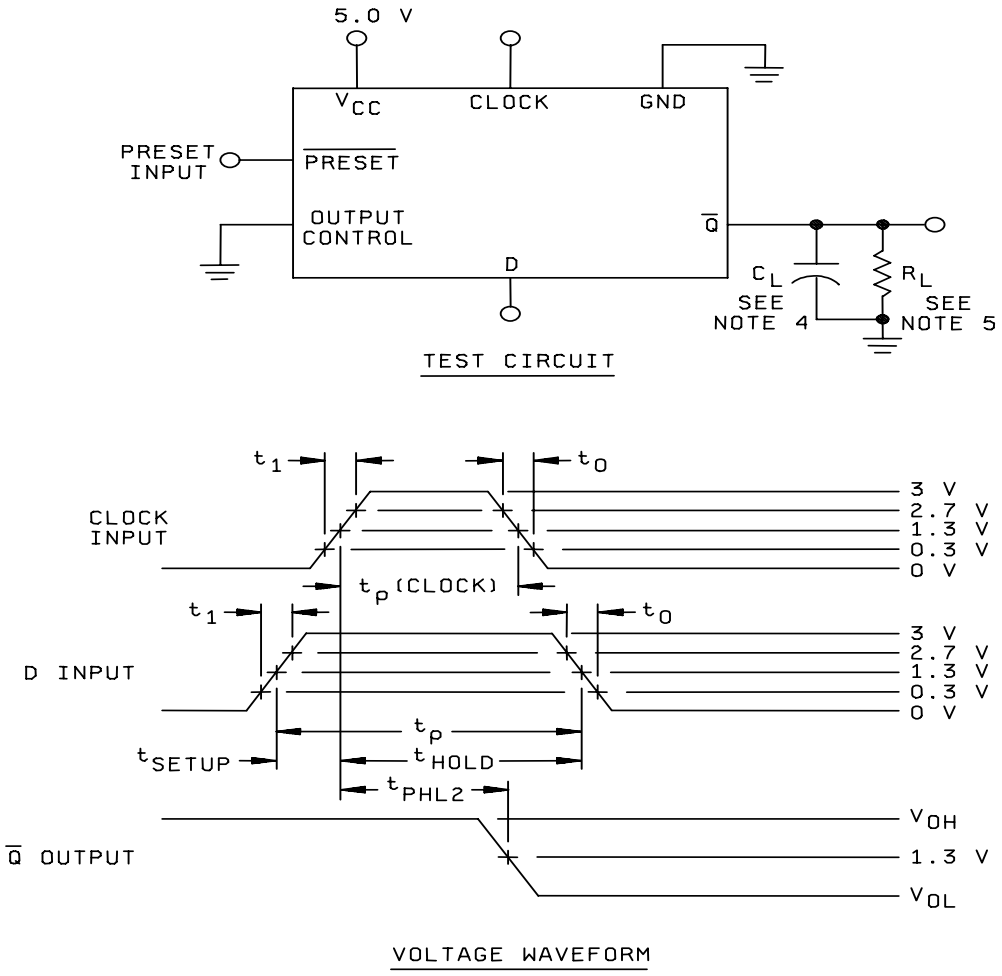
NOTES:
1. Output control characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; $t_p \geq 200$ ns; PRR ≤ 1 MHz.
2. $C_L = 50$ pF ±10% (including jig and probe capacitance without package in test fixture).
3. $R_L = 499\Omega \pm 5\%$.
4. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 4. Tri-state switching test circuit (device type 06)



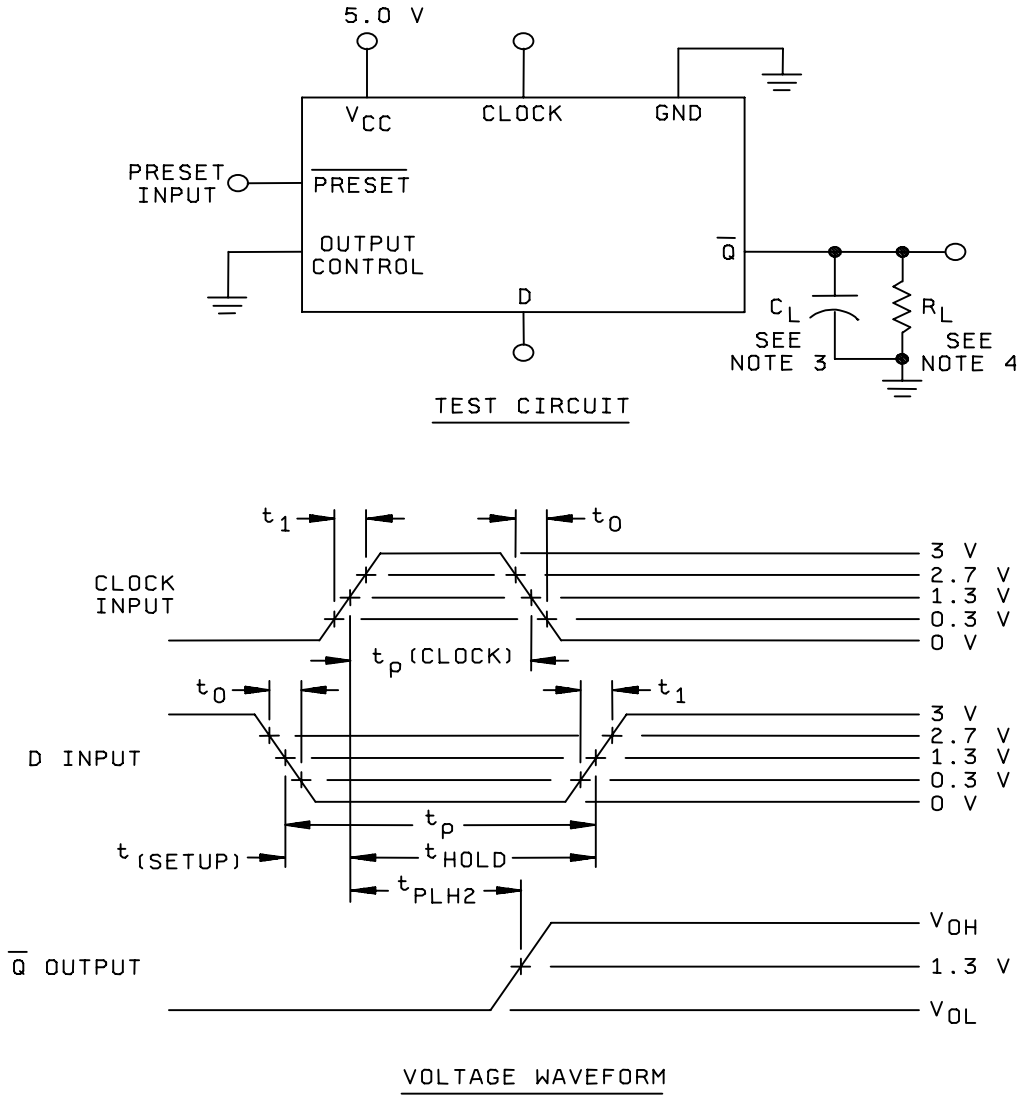
NOTES:
1. Preset inputs dominate regardless of the state of clock or D inputs.
2. Preset input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; t_p ($\overline{\text{preset}}$) = 10 ns; PRR ≤ 1 MHz.
3. t_p (clock) = 16.5 ns min; PRR = Preset PRR.
4. C_L = 50 pF ±10% (including jig and probe capacitance without package in test fixture).
5. R_L = 499Ω ±1%.
6. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 4. Preset switching test circuit and waveforms (device type 07).



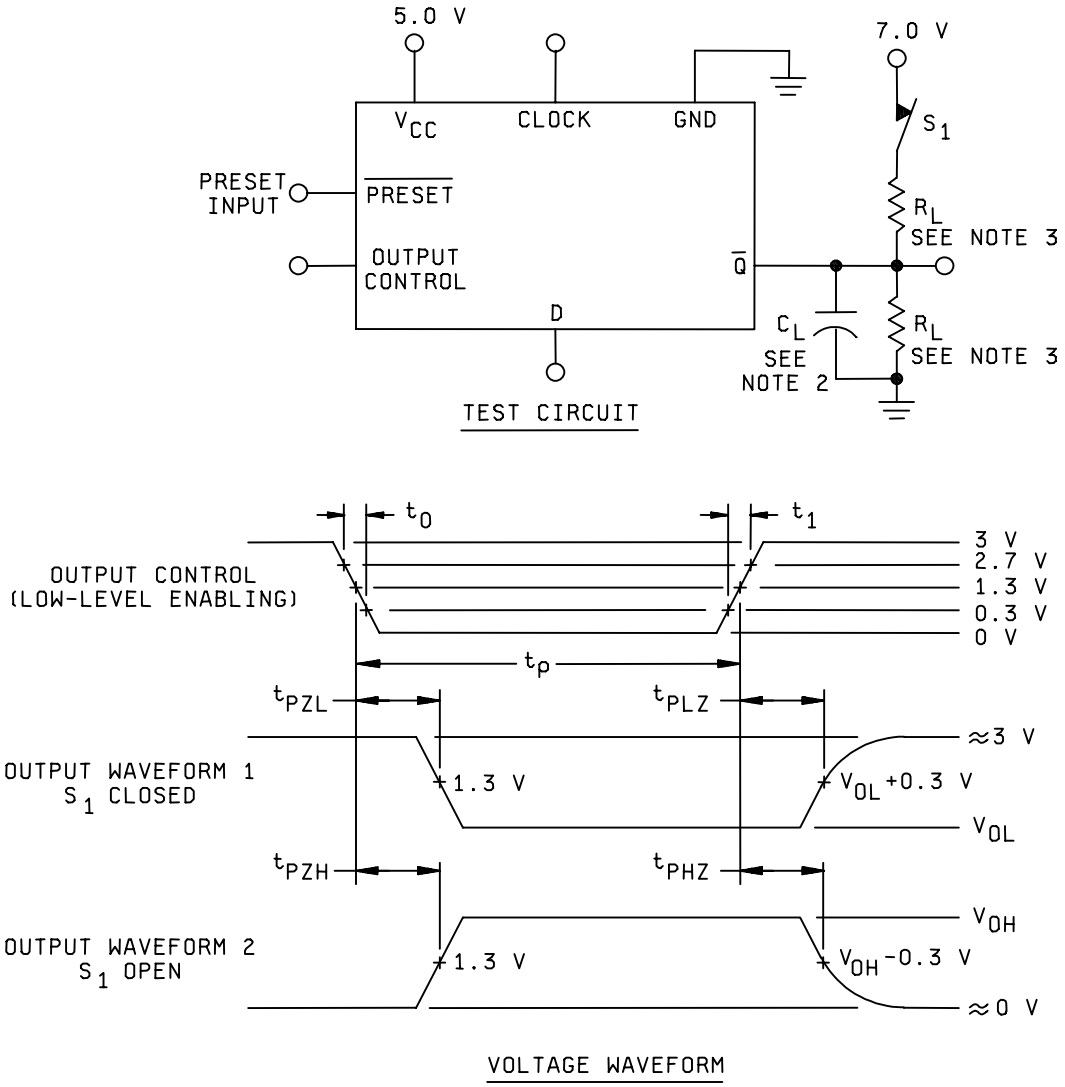
NOTES:
1. Clock input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; t_p (clock) = 16.5 ns; PRR ≤ 1 MHz.
2. D input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; t_{setup} = 15 ns; t_{hold} = 4 ns; t_p = 19 ns; PRR is 50% of the clock PRR.
3. For f_{MAX}, the clock input pulse characteristics are as follows:
   $t_1 = t_0 \leq 3$ ns; t_p (clock) = 16.5 ns; PRR = 30 MHz.
   The D input pulse shall be one-half of the frequency of the clock and the D ↑ and ↓ shall be coincident with the clock ↓. $t_1 = t_0 = 6 \pm 1.5$ ns.
4. C_L = 50 pF ±10% (including jig and probe capacitance without package in test fixture).
5. R_L = 499Ω ±1%.
6. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 4. Synchronous switching test circuit (high-level data) (device type 07).



NOTES:
1. Clock input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; t_p (clock) = 16.5 ns; PRR ≤ 1 MHz.
2. D input pulse characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; t_{setup} = 15 ns; t_{hold} = 4 ns; t_p = 19 ns; PRR is 50% of the clock PRR.
3. C_L = 50 pF ±10% (including jig and probe capacitance without package in test fixture).
4. R_L = 499Ω ±1%.
5. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 4. Synchronous switching test circuit (low-level data) (device type 07).



NOTES:
1. Output control characteristics: $t_1 = t_0 = 6 \pm 1.5$ ns; $t_p \geq 200$ ns; PRR ≤ 1 MHz.
2. $C_L = 50$ pF ±10% (including jig and probe capacitance without package in test fixture).
3. $R_L = 499\Omega \pm 5\%$.
4. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 4. Tri-state switching test circuit (device type 07)

TABLE III. Group A inspection for device type 01.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 1/ 2	2	3	4	6	8	9	10	12	13	14	16	18	19	20	Measured terminal	Limits		Unit
			Cases A, B, C, D	1	2	3	4	5	6	7	8	9	10	11	12	13	14		Min	Max	
			Test no.	1 $\overline{\text{CLR}}$	1D	1CLK	1 $\overline{\text{PR}}$	1Q	1 $\overline{\text{Q}}$	GND	2 $\overline{\text{Q}}$	2Q	2 $\overline{\text{PR}}$	2CLK	2D	2 $\overline{\text{CLR}}$	V_{CC}				
1 Tc = 25°C	V_{OH}	3006	1	2.0 V	2.0 V	GND	0.8 V	-0.4 mA		GND							4.5 V	1Q	2.5		V
		"	2	0.8 V	"	GND	2.0 V		-0.4 mA	"							"	1 $\overline{\text{Q}}$	"		"
		"	3	2.0 V	"	2/	"	-0.4 mA		"							"	1Q	"		"
		"	4	2.0 V	0.8 V	2/	"		-0.4 mA	"							"	1 $\overline{\text{Q}}$	"		"
		"	5							"	-0.4 mA		2.0 V	GND	2.0 V	0.8 V	"	2 $\overline{\text{Q}}$	"		"
		"	6							"		-0.4 mA	0.8 V	GND	2.0 V	2.0 V	"	2Q	"		"
		"	7							"	-0.4 mA		2.0 V	2/	0.8 V	"	"	2 $\overline{\text{Q}}$	"		"
		"	8							"		-0.4 mA	2.0 V	2/	2.0 V	"	"	2Q	"		"
	V_{OL}	3007	9	2.0 V	0.8 V	2/	2.0 V	4 mA		"							"	1Q		0.4	"
		"	10	"	2.0 V	2/	2.0 V		4 mA	"							"	1 $\overline{\text{Q}}$		"	"
		"	11	"	"	GND	0.8 V		4 mA	"							"	1 $\overline{\text{Q}}$		"	"
		"	12	0.8 V	"	GND	2.0 V	4 mA		"							"	1Q		"	"
		"	13							"		4 mA	2.0 V	2/	0.8 V	2.0 V	"	2Q		"	"
		"	14							"	4 mA		2.0 V	2/	2.0 V	"	"	2 $\overline{\text{Q}}$		"	"
		"	15							"	4 mA		0.8 V	GND	"	"	"	2 $\overline{\text{Q}}$		"	"
		"	16							"		4 mA	2.0 V	GND	"	0.8 V	"	2Q		"	"
	V_{IC}		17	-18 mA						"							"	1 $\overline{\text{CLR}}$		-1.5	"
			18		-18 mA					"							"	1D		"	"
			19			-18 mA				"							"	1CLK		"	"
			20				-18 mA			"							"	1 $\overline{\text{PR}}$		"	"
			21							"			-18 mA				"	2 $\overline{\text{PR}}$		"	"
			22							"				-18 mA			"	2CLK		"	"
			23							"					-18 mA		"	2D		"	"
			24							"						-18 mA	"	2 $\overline{\text{CLR}}$		"	"
	I_{IL1}	3009	25	5.0 V	0.4 V	5.0 V	GND			"							5.5 V	1D	8/	8/	µA
		"	26	5.0 V	GND	0.4 V	GND			"							"	1CLK	"	"	"
		"	27							"			GND	0.4 V	GND	5.0 V	"	2CLK	"	"	"
		"	28							"			GND	5.0 V	0.4 V	5.0 V	"	2D	"	"	"
	I_{IL4}	"	29	0.4 V	5.0 V	5.0 V	GND			"							"	1 $\overline{\text{CLR}}$	"	"	"
		"	30	GND	GND	GND	0.4 V			"							"	1 $\overline{\text{PR}}$	"	"	"
		"	31							"			0.4 V	GND	GND	GND	"	2 $\overline{\text{PR}}$	"	"	"
		"	32							"			GND	5.0 V	5.0 V	0.4 V	"	2 $\overline{\text{CLR}}$	"	"	"
	I_{IH1}	"	33	GND	2.7 V	GND	GND			"							"	1D		20	"
		"	34	GND	GND	2.7 V	GND			"							"	1CLK		"	"
		"	35							"			GND	2.7 V	GND	GND	"	2CLK		"	"
		"	36							"			GND	GND	2.7 V	GND	"	2D		"	"
	I_{IH4}	"	37	2.7 V	GND	3/	GND			"							"	1 $\overline{\text{CLR}}$		40	"
		"	38	GND	GND	3/	2.7 V			"							"	1 $\overline{\text{PR}}$		"	"
		"	39							"			2.7 V	3/	GND	GND	"	2 $\overline{\text{PR}}$		"	"
		"	40							"			GND	3/	GND	2.7 V	"	2 $\overline{\text{CLR}}$		"	"
	I_{IH6}	"	41	GND	7.0 V	GND	GND			"							"	1D		100	"
		"	42	GND	GND	7.0 V	GND			"							"	1CLK		"	"
		"	43							"			GND	7.0 V	GND	GND	"	2CLK		"	"
		"	44							"			GND	GND	7.0 V	GND	"	2D		"	"

See footnotes at end of device types 01.

TABLE III. Group A inspection for device type 01.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 1/ 2	2	3	4	6	8	9	10	12	13	14	16	18	19	20	Measured terminal	Limits		Unit
			Cases A, B, C, D	1	2	3	4	5	6	7	8	9	10	11	12	13	14		Min	Max	
			Test no.	1 $\overline{\text{CLR}}$	1D	1CLK	1 $\overline{\text{PR}}$	1Q	1 $\overline{\text{Q}}$	GND	2 $\overline{\text{Q}}$	2Q	2 $\overline{\text{PR}}$	2CLK	2D	2 $\overline{\text{CLR}}$	V_{CC}				
1	I_{IH9}	3009	45	7.0 V	GND	3/	GND			GND							5.5 V	1 $\overline{\text{CLR}}$		200	µA
Tc = 25°C		"	46	GND	GND	3/	7.0 V			"							"	1 $\overline{\text{PR}}$		"	"
		"	47							"			7.0 V	3/	GND	GND	"	2 $\overline{\text{PR}}$		"	"
		"	48							"			GND	3/	GND	7.0 V	"	2 $\overline{\text{CLR}}$		"	"
	I_0 4/	3011	49	5.0 V			GND	2.25 V		"							"	1Q	10/	10/	mA
		"	50	GND			5.0 V		2.25 V	"							"	1 $\overline{\text{Q}}$	"	"	"
		"	51							"	2.25 V		5.0 V			GND	"	2 $\overline{\text{Q}}$	"	"	"
		"	52							"		2.25 V	GND			5.0 V	"	2Q	"	"	"
	I_{CC}	3005	53	5.5 V	GND	GND	GND			"			GND	GND	GND	5.5 V	"	V_{CC}		4.0	"
		"	54	GND	GND	GND	5.5 V			"			5.5 V	GND	GND	GND	"	V_{CC}		"	"
2	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = +125°C and V_{IC} tests are omitted.																				
3	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = -55°C and V_{IC} tests are omitted.																				
7 5/	Truth	3014	55	B	B	B	B	H	H	GND	H	H	B	B	B	B	5.0 V	All	6/	6/	
T_C = +25°C	table	"	56	B	"	"	A	L	"	"	"	L	A	"	"	B	"	Outputs	"	"	
	tests	"	57	A	"	"	A	L	"	"	"	L	A	"	"	A	"	"	"	"	
	9/	"	58	"	"	"	B	H	L	"	L	H	B	"	"	"	"	"	"	"	
		"	59	"	"	A	B	H	L	"	L	H	B	A	"	"	"	"	"	"	
		"	60	B	"	"	A	L	H	"	H	L	A	"	"	B	"	"	"	"	
		"	61	"	A	"	"	"	"	"	"	"	"	"	A	"	"	"	"	"	
		"	62	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
		"	63	A	"	"	"	H	L	"	"	"	"	"	"	A	"	"	"	"	
		"	64	"	"	"	B	H	L	"	L	H	B	"	"	"	"	"	"	"	
		"	65	"	"	"	A	"	"	"	"	"	A	"	"	"	"	"	"	"	
		"	66	"	"	B	"	"	"	"	"	"	"	B	"	"	"	"	"	"	
			67	"	B	B	"	"	"	"	"	"	"	B	B	"	"	"	"	"	
		"	68	"	"	A	"	L	H	"	H	L	"	A	"	"	"	"	"	"	
		"	69	"	"	"	B	H	L	"	L	H	B	"	"	"	"	"	"	"	
		"	70	B	A	"	A	L	H	"	H	L	A	"	A	B	"	"	"	"	
		"	71	"	B	"	"	"	"	"	"	"	"	"	B	"	"	"	"	"	
		"	72	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
		"	73	A	"	"	"	"	"	"	"	"	"	"	"	A	"	"	"	"	
		"	74	"	A	B	"	"	"	"	"	"	"	B	A	"	"	"	"	"	
		"	75	"	"	A	"	H	L	"	L	H	"	A	"	"	"	"	"	"	
		"	76	"	"	"	B	"	"	"	"	"	B	"	"	"	"	"	"	"	
		"	77	"	"	"	A	"	"	"	"	"	A	"	"	"	"	"	"	"	
		"	78	B	"	"	"	L	H	"	H	L	"	"	"	B	"	"	"	"	
		"	79	A	"	"	"	H	L	"	H	L	"	"	"	A	"	"	"	"	
		"	80	"	B	"	B	H	L	"	L	H	B	"	B	"	"	"	"	"	
		"	81	"	B	"	A	L	H	"	L	H	A	"	B	"	"	"	"	"	
8 5/	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = +125°C and -55°C.																				

See footnotes at end of device types 01.

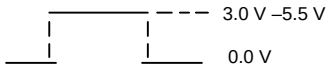
TABLE III. Group A inspection for device type 01.

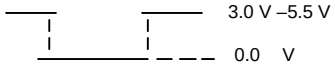
Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 1/ 2	2	3	4	6	8	9	10	12	13	14	16	18	19	20	Measured terminal	Limits		Unit
			Cases A, B, C, D	1	2	3	4	5	6	7	8	9	10	11	12	13	14				
			Test no.	1 $\overline{\text{CLR}}$	1D	1CLK	1 $\overline{\text{PR}}$	1Q	1 $\overline{\text{Q}}$	GND	2 $\overline{\text{Q}}$	2Q	2 $\overline{\text{PR}}$	2CLK	2D	2 $\overline{\text{CLR}}$	V_{CC}		Min	Max	
9	f_{MAX}	Fig 4	82	3.5 V	IN	IN	3.5 V	OUT		GND							5.0 V	1CLK to 1Q	30		MHz
T_C = 25°C	7/	"	83	3.5 V	IN	IN	3.5 V		OUT	"							"	1CLK to 1 $\overline{\text{Q}}$	"		"
		"	84							"	OUT		3.5 V	IN	IN	3.5 V	"	2CLK to 2Q	"		"
		"	85							"		OUT	3.5 V	IN	IN	3.5 V	"	2CLK to 2 $\overline{\text{Q}}$	"		"
	t_{PLH1}	3003	86							"		OUT	IN			IN	"	2PR to 2Q	3	13	ns
		"	87							"	OUT		IN			IN	"	2CLR to 2 $\overline{\text{Q}}$	"	"	"
		"	88	IN			IN		OUT	"							"	1CLR to 1 $\overline{\text{Q}}$	"	"	"
		"	89	IN			IN	OUT		"							"	1PR to 1Q	"		"
	t_{PHL1}	"	90	IN			IN	OUT		"							"	1CLR to 1Q	5	15	"
		"	91	IN			IN		OUT	"							"	1PR to 1 $\overline{\text{Q}}$	"	"	"
			92							"	OUT		IN			IN	"	2PR to 2 $\overline{\text{Q}}$	"	"	"
		"	93							"		OUT	IN			IN	"	2CLR to 2Q	"	"	"
	t_{PLH2}	"	94	3.5 V	IN	IN	3.5 V	OUT		"							"	1CLK to 1Q	"	16	"
		"	95	3.5 V	IN	IN	3.5 V		OUT	"							"	1CLK to 1 $\overline{\text{Q}}$	"	"	"
		"	96							"	OUT		3.5 V	IN	IN	3.5 V	"	2CLK to 2 $\overline{\text{Q}}$	"	"	"
		"	97							"		OUT	3.5 V	IN	IN	3.5 V	"	2CLK to 2Q	"	"	"
	t_{PHL2}	"	98	3.5 V	IN	IN	3.5 V	OUT		"							"	1CLK to 1Q	"	18	"
		"	99	3.5 V	IN	IN	3.5 V		OUT	"							"	1CLK to 1 $\overline{\text{Q}}$	"	"	"
		"	100							"	OUT		3.5 V	IN	IN	3.5 V	"	2CLK to 2 $\overline{\text{Q}}$	"	"	"
		"	101							"		OUT	3.5 V	IN	IN	3.5 V	"	2CLK to 2Q	"	"	"
10	f_{MAX} 7/	"	102-105	Same tests and terminal conditions as for subgroup 9, except T_C = -125°C.															30		MHz
	t_{PLH1}	"	106-109																3	15	ns
	t_{PHL1}		110-113																5	17	"
	t_{PLH2}	"	114-117																5	18	"
	t_{PHL2}	"	118-121																7	20	"
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																				

See footnotes at end of device types 01.

1/ pins not referenced are N/C.

2/ 

3/ 

4/ Method 3011 shall be used, except the output voltage shall be as specified herein, and the output current shall be operating rather than short circuit current. The output conditions have been chosen to produce a current that closely approximates one half of the true short circuit output current $I_{os.}$

5/ Tests shall be performed in sequence, attributes data only.

6/ Output voltages shall be either: (1) H ≥ 2.5 V minimum and L ≤ 0.4 V maximum when using a high-speed checker double comparator; (2) H ≥ 1.5 V and L ≤ 1.5 V when using high-speed checker single comparator.

7/ f_{MAX} limit is the frequency of the input pulse. The output frequency shall be one-half the input frequency.

8/ I_{IL} limits shall be as follows:

Test	Min/Max limits in (μA) for circuit		
	A	B	C
I_{IL1}	0/-200	0/-200	0/-200
I_{IL4}	0/-400	0/-400	0/-400

9/ A = 3.0 V minimum; B = 0.0 V or GND.

10/

Test	Min/Max limits in mA		
	A	B	C
I_0	-20/-112	-30/-112	-30/-112

TABLE III. Group A inspection for device type 02.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 2	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured terminal	Limits		Unit
			Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
			Test no.	1 $\overline{\text{CLR}}$	1J	1 $\overline{\text{K}}$	1CLK	1 $\overline{\text{PR}}$	1Q	1 $\overline{\text{Q}}$	GND	2 $\overline{\text{Q}}$	2Q	2 $\overline{\text{PR}}$	2CLK	2 $\overline{\text{K}}$	2J	2 $\overline{\text{CLR}}$	V_{CC}		Min	Max	
1 Tc = 25°C	V_{OH}	3006	1	2.0 V	0.8 V	0.8 V	GND	0.8 V	-0.4 mA		GND								4.5 V	1Q	2.5		V
		"	2	0.8 V	0.8 V	0.8 V	GND	2.0 V		-0.4 mA	"								"	1 $\overline{\text{Q}}$	"		"
		"	3	2.0 V	2.0 V	2.0 V	2/	"	-0.4 mA		"								"	1Q	"		"
		"	4	2.0 V	0.8 V	0.8 V	2/	"		-0.4 mA	"								"	1 $\overline{\text{Q}}$	"		"
		"	5								"	-0.4 mA		2.0 V	GND	2.0 V	2.0 V	0.8 V	"	2 $\overline{\text{Q}}$	"		"
		"	6								"		-0.4 mA	0.8 V	GND	2.0 V	2.0 V	2.0 V	"	2Q	"		"
		"	7								"	-0.4 mA		2.0 V	2/	0.8 V	0.8 V	"	"	2 $\overline{\text{Q}}$	"		"
		"	8								"		-0.4 mA	2.0 V	2/	2.0 V	2.0 V	"	"	2Q	"		"
	V_{OL}	3007	9	0.8 V	0.8 V	0.8 V	GND	2.0 V	4 mA		"								"	1Q		0.4	"
		"	10	2.0 V	"	"	GND	0.8 V		4 mA	"								"	1 $\overline{\text{Q}}$		"	"
			11	"	"	"	2/	2.0 V	4 mA		"								"	1Q		"	"
		"	12	"	2.0 V	2.0 V	2/	2.0 V		4 mA	"								"	1 $\overline{\text{Q}}$		"	"
		"	13								"	4 mA		0.8 V	GND	0.8 V	0.8 V	2.0 V	"	2 $\overline{\text{Q}}$		"	"
		"	14								"		4 mA	2.0 V	GND	0.8 V	0.8 V	0.8 V	"	2Q		"	"
		"	15								"	4 mA		"	2/	2.0 V	2.0 V	2.0 V	"	2 $\overline{\text{Q}}$		"	"
		"	16								"		4 mA	"	2/	0.8 V	0.8 V	2.0 V	"	2Q		"	"
	V_{IC}		17	-18 mA							"								"	1 $\overline{\text{CLR}}$		-1.5	"
			18		-18 mA						"								"	1J		"	"
			19			-18 mA					"								"	1 $\overline{\text{K}}$		"	"
			20				-18 mA				"								"	1CLK		"	"
			21					-18 mA			"								"	1 $\overline{\text{PR}}$		"	"
			22								"			-18 mA					"	2 $\overline{\text{PR}}$		"	"
			23								"				-18 mA				"	2CLK		"	"
			24								"					-18 mA			"	2 $\overline{\text{K}}$		"	"
			25								"						-18 mA		"	2J		"	"
			26								"							-18 mA	"	2CLR		"	"
	I_{IL2}	3009	27	3/	0.4 V	5.0 V	GND	5.0 V			"								5.5 V	1J	8/	8/	µA
		"	28	5.0 V	5.0 V	0.4 V	GND	3/			"								"	1 $\overline{\text{K}}$	"	"	"
		"	29								"			3/	GND	0.4 V	5.0 V	5.0 V	"	2 $\overline{\text{K}}$	"	"	"
		"	30								"			5.0 V	GND	5.0 V	0.4 V	3/	"	2J	"	"	"
		"	31	3/	5.0 V	5.0 V	0.4 V	5.0 V			"								"	1CLK	"	"	"
		"	32								"			5.0 V	0.4 V	5.0 V	5.0 V	3/	"	2CLK	"	"	"
	I_{IL4}	"	33	0.4 V	5.0 V	5.0 V	5.0 V	GND			"								"	1CLR	"	"	"
		"	34	GND	5.0 V	5.0 V	5.0 V	0.4 V			"								"	1PR	"	"	"
		"	35								"			0.4 V	5.0 V	5.0 V	5.0 V	GND	"	2 $\overline{\text{PR}}$	"	"	"
		"	36								"			GND	5.0 V	5.0 V	5.0 V	0.4 V	"	2 $\overline{\text{CLR}}$	"	"	"
	I_{IH2}	3010	37	GND	2.7 V	GND	GND	GND			"								"	1J		20	"
		"	38	GND	GND	2.7 V	GND	GND			"								"	1K		"	"
		"	39								"			GND	GND	2.7 V	GND	GND	"	2 $\overline{\text{K}}$		"	"
		"	40								"			GND	GND	GND	2.7 V	GND	"	2J		"	"
	I_{IH4}	"	41	2.7 V	GND	GND	GND	GND			"								"	1 $\overline{\text{CLR}}$		40	"
		"	42	GND	4.5 V	GND	GND	2.7 V			"								"	1 $\overline{\text{PR}}$		"	"
		"	43								"			2.7 V	GND	GND	4.5 V	GND	"	2 $\overline{\text{PR}}$		"	"
		"	44								"			GND	GND	GND	GND	2.7 V	"	2 $\overline{\text{CLR}}$		"	"
	I_{IH5}	"	45	GND	GND	GND	2.7 V	GND			"								"	1CLK		20	"
		"	46								"			GND	2.7 V	GND	GND	GND	"	2CLK		"	"

See footnotes at end of device types 02.

TABLE III. Group A inspection for device type 02.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 2	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured terminal	Limits		Unit
			Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
			Test no.	1 $\overline{\text{CLR}}$	1J	1 $\overline{\text{K}}$	1CLK	1 $\overline{\text{PR}}$	1Q	1 $\overline{\text{Q}}$	GND	2 $\overline{\text{Q}}$	2Q	2 $\overline{\text{PR}}$	2CLK	2 $\overline{\text{K}}$	2J	2 $\overline{\text{CLR}}$	V_{CC}		Min	Max	
1 Tc = 25°C	I_{IH7}	3010	47	GND	7.0 V	GND	GND	GND			GND								5.5 V	1J		100	µA
		"	48	GND	GND	7.0 V	GND	GND			"								"	1 $\overline{\text{K}}$		"	"
		"	49								"			GND	GND	7.0 V	GND	GND	"	2 $\overline{\text{K}}$		"	"
		"	50								"			GND	GND	GND	7.0 V	GND	"	2J		"	"
	I_{IH9}	"	51	7.0 V	GND	GND	GND	GND			"								"	1 $\overline{\text{CLR}}$		200	"
		"	52	GND	GND	GND	GND	7.0 V			"								"	1 $\overline{\text{PR}}$		"	"
		"	53								"			7.0 V	GND	GND	GND	GND	"	2 $\overline{\text{PR}}$		"	"
		"	54								"			GND	GND	GND	GND	7.0 V	"	2 $\overline{\text{CLR}}$		"	"
	I_{IH10}	"	55	GND	GND	GND	7.0 V	GND			"								"	1CLK		100	"
		"	56								"			GND	7.0 V	GND	GND	GND	"	2CLK		"	"
	I_O 4/	3011	57	5.0 V				GND	2.25 V		"								"	1Q	11/	11/	"
		"	58	GND				5.0 V		2.25 V	"								"	1 $\overline{\text{Q}}$	"	"	"
		"	59								"	2.25 V		5.0 V				GND	"	2 $\overline{\text{Q}}$	"	"	"
		"	60								"		2.25 V	GND				5.0 V	"	2Q	"	"	"
	I_{CC}	3005	61	5.5 V	GND	GND	GND	GND			"			GND	GND	GND	GND	5.5 V	"	V_{CC}		4	mA
		"	62	GND	GND	GND	GND	5.5 V			"			5.5 V	GND	GND	GND	GND	"	V_{CC}		"	"
2	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = +125°C.																						
3	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = -55°C.																						
7 5/ Tc = 25°C	Truth table tests 10/	3014	63	A	A	A	B	B	H	L	GND	L	H	B	B	A	A	A	5.0 V	All Outputs	6/	6/	
		"	64	"	"	"	B	A	"	"	"	"	"	A	B	"	"	"	"		"	"	
		"	65	"	"	"	A	"	"	"	"	"	"	"	A	"	"	"	"		"	"	
		"	66	"	"	B	A	"	"	"	"	"	"	"	A	B	"	"	"		"	"	
		"	67	"	"	"	B	"	"	"	"	"	"	"	B	"	"	"	"		"	"	
		"	68	"	"	"	A	"	L	H	"	H	L	"	A	"	"	"	"		"	"	
		"	69	"	"	"	B	"	"	"	"	"	"	"	B	"	"	"	"		"	"	
		"	70	B	"	"	"	"	"	"	"	"	"	"	"	"	"	B	"		"	"	
		"	71	A	"	"	"	"	"	"	"	"	"	"	"	"	"	A	"		"	"	
		"	72	"	"	"	A	"	H	L	"	L	H	"	A	"	"	"	"		"	"	
		"	73	"	"	"	B	"	H	L	"	L	H	"	B	"	"	"	"		"	"	
		"	74	"	"	"	A	"	L	H	"	H	L	"	A	"	"	"	"		"	"	
		"	75	"	"	"	B	"	L	H	"	H	L	"	B	"	"	"	"		"	"	
		"	76	"	"	"	B	B	H	L	"	L	H	B	B	"	"	"	"		"	"	
		"	77	"	"	"	A	B	"	"	"	"	"	B	A	"	"	"	"		"	"	
		"	78	"	"	"	A	A	"	"	"	"	"	A	A	"	"	"	"		"	"	
		"	79	"	"	"	B	"	"	"	"	"	"	"	B	"	"	"	"		"	"	
		"	80	"	"	"	A	"	L	H	"	H	L	"	A	"	"	"	"		"	"	
		"	81	"	"	"	B	"	"	"	"	"	"	"	B	"	"	"	"		"	"	
		"	82	B	B	"	"	"	"	"	"	"	"	"	"	"	B	B	"		"	"	
		"	83	A	"	"	"	"	"	"	"	"	"	"	"	"	"	A	"		"	"	
		"	84	"	"	"	"	"	"	"	"	"	"	"	A	"	"	"	"		"	"	
		"	85	"	A	"	"	"	"	"	"	"	"	"	A	"	A	"	"		"	"	
		"	86	"	"	"	"	"	"	"	"	"	"	"	B	"	"	"	"		"	"	
		"	87	"	"	"	"	B	H	L	"	L	H	B	"	"	"	"	"		"	"	
		"	88	"	"	"	"	A	H	L	"	L	H	A	"	"	"	"	"		"	"	
		"	89	"	"	"	A	"	L	H	"	H	L	"	A	"	"	"	"		"	"	
		"	90	"	"	"	B	"	"	"	"	"	"	"	B	"	"	"	"		"	"	
		"	91	B	"	"	B	"	"	"	"	"	"	"	B	"	"	B	"		"	"	
		"	92	B	"	"	A	"	"	"	"	"	"	"	A	"	"	B	"		"	"	
		"	93	A	"	"	A	"	"	"	"	"	"	"	A	"	"	A	"		"	"	
		"	94	"	"	"	B	"	"	"	"	"	"	"	B	"	"	"	"		"	"	
		"	95	"	B	A	B	"	"	"	"	"	"	"	B	A	B	"	"		"	"	

See footnotes at end of device types 02.

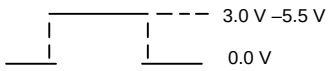
TABLE III. Group A inspection for device type 02.

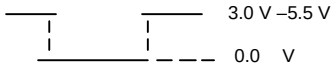
Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 2	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured terminal	Limits		Unit
			Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
			Test no.	1 $\overline{CLR}$	1J	1 $\overline{K}$	1CLK	1 $\overline{PR}$	1Q	1 $\overline{Q}$	GND	2 $\overline{Q}$	2Q	2 $\overline{PR}$	2CLK	2 $\overline{K}$	2J	2 $\overline{CLR}$	V_{CC}		Min	Max	
7 5/ Tc = 25°C	Truth table tests 10/	3014	96	A	B	A	A	A	L	H	GND	H	L	A	A	A	B	A	5.0 V	All Outputs	6/	6/	
		"	97	"	A	"	"	B	H	L	"	L	H	B	"	"	A	"	"		"	"	
		"	98	"	"	"	"	A	H	L	"	L	H	A	"	"	"	"	"	"	"	"	
		"	99	B	"	"	"	A	L	H	"	H	L	A	"	"	"	B	"	"	"	"	
		"	100	A	B	B	B	B	H	L	"	L	H	B	B	B	B	A	"	"	"	"	
		"	101	A	"	"	"	A	H	L	"	L	H	A	"	"	"	A	"	"	"	"	
		"	102	B	"	"	"	A	L	H	"	H	L	A	"	"	"	B	"	"	"	"	
8 5/	Same tests, terminal conditions, and limits as for subgroup 7, except T_C = +125°C and -55°C.																						
9 Tc = 25°C	f_{MAX}	Fig. 4	103	3.5 V	3.5 V	GND	IN	3.5 V	OUT		GND								5.0 V	1Q	30		MHz
	7/	"	104	3.5 V	3.5 V	GND	IN	3.5 V		OUT	"								"	1 $\overline{Q}$	"		"
		"	105								"	OUT		3.5 V	IN	GND	3.5 V	3.5 V	"	2 $\overline{Q}$	"		"
		"	106								"		OUT	3.5 V	IN	GND	3.5 V	3.5 V	"	2Q	"		"
	t_{PLH1}	3003 Fig. 4	107	IN	3.5 V	3.5 V	IN	3.5 V		OUT	"								"	1 $\overline{CLR}$ to 1 $\overline{Q}$	3.0	13.0	ns
		"	108	3.5 V	GND	GND	IN	IN	OUT		"								"	1 $\overline{PR}$ to 1Q	"	"	"
		"	109								"		OUT	IN	IN	GND	GND	3.5 V	"	2 $\overline{PR}$ to 2Q	"	"	"
		"	110								"	OUT		3.5 V	IN	3.5 V	3.5 V	IN	"	2 $\overline{CLR}$ to 2 $\overline{Q}$	"	"	"
	t_{PHL1}	"	111	IN	3.5 V	3.5 V	IN	3.5 V	OUT		"								5.5 V	1 $\overline{CLR}$ to 1Q	5.0	15.0	"
		"	112	3.5 V	GND	GND	IN	IN		OUT	"								"	1 $\overline{PR}$ to 1 $\overline{Q}$	"	"	"
		"	113								"	OUT		IN	IN	GND	GND	3.5 V	"	2 $\overline{PR}$ to 2 $\overline{Q}$	"	"	"
		"	114								"		OUT	3.5 V	IN	3.5 V	3.5 V	IN	"	2 $\overline{CLR}$ to 2Q	"	"	"
	t_{PLH2}	"	115	9/	3.5 V	GND	IN	3.5 V	OUT		"								"	1CLK to 1Q	"	16.0	"
		"	116	3.5 V	3.5 V	GND	IN	9/		OUT	"								"	1CLK to 1 $\overline{Q}$	"	"	"
		"	117								"	OUT		9/	IN	GND	3.5 V	3.5 V	"	2CLK to 2 $\overline{Q}$	"	"	"
		"	118								"		OUT	3.5 V	IN	GND	3.5 V	9/	"	2CLK to 2Q	"	"	"
	t_{PHL2}	"	119	3.5 V	3.5 V	GND	IN	9/	OUT		"								"	1CLK to 1Q	"	18.0	"
		"	120	9/	"	"	"	3.5 V		OUT	"								"	1CLK to 1 $\overline{Q}$	"	"	"
		"	121								"	OUT		3.5 V	IN	GND	3.5 V	9/	"	2CLK to 2 $\overline{Q}$	"	"	"
		"	122								"		OUT	9/	IN	GND	3.5 V	3.5 V	"	2CLK to 2Q	"	"	"
10	f_{MAX}	3003 Fig. 4	Same tests and terminal conditions as for subgroup 9, except T_C = +125°C.																		30		MHz
	t_{PLH2}	"																			3	15	ns
	t_{PHL1}	"																			5	17	"
	t_{PLH2}	"																			5	18	"
	t_{PHL2}	"																			7	20	"
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																						

See footnotes at end of device types 02.

1/ pins not referenced are N/C.

2/ 

3/ 

4/ Method 3011 shall be used, except the output voltage shall be as specified herein, and the output current shall be operating rather than short circuit current. The output conditions have been chosen to produce a current that closely approximates one half of the true short circuit output current $I_{os.}$

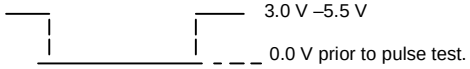
5/ Tests shall be performed in sequence, attributes data only.

6/ Output voltages shall be either: (1) H ≥ 2.5 V minimum and L ≤ 0.4 V maximum when using a high-speed checker double comparator; (2) H ≥ 1.5 V and L ≤ 1.5 V when using high-speed checker single comparator.

7/ f_{MAX} limit is the frequency of the input pulse. The output frequency shall be one-half the input frequency.

8/ I_{IL} limits shall be as follows:

Test	Min/Max limits in (μA) for circuit		
	A	B	C
I_{IL2}	0/-200	0/-200	0/-200
I_{IL4}	0/-400	0/-400	0/-400

9/ 

10/ A = 3.0 V minimum; B = 0.0 V or GND.

11/

Test	Min/Max limits in (mA) for circuit		
	A	B	C
I_0	-20/-112	-30/-112	-30/-112

TABLE III. Group A inspection for device type 03.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 2	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured terminal	Limits		Unit
			Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
			Test no.	1CLK	1K	1J	1 $\overline{PR}$	1Q	1 $\overline{Q}$	2 $\overline{Q}$	GND	2Q	2 $\overline{PR}$	2J	2K	2CLK	2 $\overline{CLR}$	1 $\overline{CLR}$	V_{CC}		Min	Max	
1 Tc = 25°C	V_{OH}	3006	1	2.0 V	2.0 V	2.0 V	0.8 V	-0.4 mA			GND								2.0 V	4.5 V	1Q	2.5		V
		"	2	2.0 V	2.0 V	"	2.0 V		-0.4 mA		"							0.8 V	"	1 $\overline{Q}$	"		"
		"	3	2/	0.8 V	"	"	-0.4 mA			"							2.0 V	"	1Q	"		"
		"	4	2/	2.0 V	0.8 V	"		-0.4 mA		"							2.0 V	"	1 $\overline{Q}$	"		"
		"	5							-0.4 mA	"		2.0 V	2.0 V	2.0 V	2.0 V	0.8 V		"	2Q	"		"
		"	6								"	-0.4 mA	0.8 V	2.0 V	"	2.0 V	2.0 V		"	2 $\overline{Q}$	"		"
		"	7							-0.4 mA	"		2.0 V	0.8 V	"	2/	"		"	2 $\overline{Q}$	"		"
		"	8								"	-0.4 mA	2.0 V	2.0 V	0.8 V	2/	"		"	2Q	"		"
	V_{OL}	3007	9	2.0 V	2.0 V	2.0 V	0.8 V		4 mA		"							2.0 V	"	1 $\overline{Q}$		0.4	"
		"	10	2.0 V	2.0 V	"	2.0 V	4 mA			"							0.8 V	"	1Q		"	"
		"	11	2/	0.8 V	"	"		4 mA		"							2.0 V	"	1 $\overline{Q}$		"	"
		"	12	2/	2.0 V	0.8 V	"	4 mA			"							2.0 V	"	1Q		"	"
		"	13							4 mA	"		0.8 V	2.0 V	2.0 V	2.0 V	2.0 V		"	2 $\overline{Q}$		"	"
		"	14								"	4 mA	2.0 V	2.0 V	"	2.0 V	0.8 V		"	2Q		"	"
		"	15								"	4 mA	"	0.8 V	"	2/	2.0 V		"	2Q		"	"
		"	16							4 mA	"		"	2.0 V	0.8 V	2/	2.0 V		"	2 $\overline{Q}$		"	"
	V_{IC}		17	-18 mA							"								"	1CLK		-1.5	"
			18		-18 mA						"								"	1K		"	"
			19			-18 mA					"								"	1J		"	"
			20				-18 mA				"								"	1PR		"	"
			21								"		-18 mA						"	2 $\overline{PR}$		"	"
			22								"			-18 mA					"	2J		"	"
			23								"				-18 mA				"	2K		"	"
			24								"					-18 mA			"	2CLK		"	"
			25								"						-18 mA		"	2 $\overline{CLR}$		"	"
			26								"							-18 mA	"	1 $\overline{CLR}$		"	"
	I_{IL2}	3009	27	5.0 V	0.4 V	5.0 V	3/				"							5.0 V	5.5 V	1K	8/	8/	µA
		"	28	5.0 V	5.0 V	0.4 V	5.0 V				"							3/	"	1J	"	"	"
		"	29								"		5.0 V	0.4 V	5.0 V	5.0 V	3/		"	2J	"	"	"
		"	30								"		3/	5.0 V	0.4 V	5.0 V	5.0 V		"	2K	"	"	"
		"	31	0.4 V	5.0 V	5.0 V	3/				"							5.0 V	"	1CLK	"	"	"
		"	32	0.4 V	5.0 V	5.0 V	5.0 V				"							3/	"	1CLK	"	"	"
	I_{IL4}	"	33	5.0 V	5.0 V	5.0 V	0.4 V				"							5.0 V	"	1PR	"	"	"
		"	34	5.0 V	5.0 V	5.0 V	5.0 V				"							0.4 V	"	1 $\overline{CLR}$	"	"	"
		"	35								"		0.4 V	5.0 V	5.0 V	5.0 V	5.0 V		"	2 $\overline{PR}$	"	"	"
	I_{IL2}	"	36								"		3/	5.0 V	5.0 V	0.4 V	5.0 V		"	2CLK	"	"	"
		"	37								"		5.0 V	5.0 V	5.0 V	0.4 V	3/		"	2CLK	"	"	"
	I_{IL4}	"	38								"		5.0 V	5.0 V	5.0 V	5.0 V	0.4 V		"	2 $\overline{CLR}$	"	"	"
	I_{IH2}	3010	39	GND	2.7 V	5.0 V	GND				"							5.0 V	"	1K		20	"
		"	40	GND	5.0 V	2.7 V	5.0 V				"							GND	"	1J		"	"
		"	41								"		5.0 V	2.7 V	5.0 V	GND	GND		"	2J		"	"
		"	42								"		GND	5.0 V	2.7 V	GND	5.0 V		"	2K		"	"
	I_{IH4}	"	43	GND	GND	5.0 V	2.7 V				"							3/	"	1 $\overline{PR}$		40	"
		"	44								"		2.7 V	5.0 V	GND	GND	3/		"	2 $\overline{PR}$		"	"
		"	45								"		3/	GND	5.0 V	GND	2.7 V		"	2 $\overline{CLR}$		"	"
		"	46	GND	5.0 V	GND	3/				"							2.7 V	"	1 $\overline{CLR}$		"	"

See footnotes at end of device types 03.

TABLE III. Group A inspection for device type 03.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 2	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured	Limits		Unit
			Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
			Test no.	1CLK	1K	1J	1 $\overline{PR}$	1Q	1 $\overline{Q}$	2 $\overline{Q}$	GND	2Q	2 $\overline{PR}$	2J	2K	2CLK	2 $\overline{CLR}$	1 $\overline{CLR}$	V_{CC}	terminal	Min	Max	
1 Tc = 25°C	I_{IH5}	3010	47	2.7 V	GND	GND	GND				GND							GND	5.5 V	1CLK		20	µA
		"	48								"		GND	GND	GND	2.7 V	GND		"	2CLK		"	"
	I_{IH7}	"	49	GND	7.0 V	5.0 V	GND				"							5.0 V	"	1K		100	"
		"	50	GND	5.0 V	7.0 V	5.0 V				"							GND	"	1J		"	"
		"	51								"		5.0 V	7.0 V	5.0 V	GND	GND		"	2J		"	"
		"	52								"		GND	5.0 V	7.0 V	GND	5.0 V		"	2K		"	"
	I_{IH9}	"	53	GND	GND	5.0 V	7.0 V				"							3/	"	1 $\overline{PR}$		200	"
		"	54								"		7.0 V	5.0 V	GND	GND	3/		"	2 $\overline{PR}$		"	"
		"	55								"		3/	GND	5.0 V	GND	7.0 V		"	2 $\overline{CLR}$		"	"
		"	56	GND	5.0 V	GND	3/				"							7.0 V	"	1 $\overline{CLR}$		"	"
	I_{IH10}	"	57	7.0 V	GND	GND	GND				"							GND	"	1CLK		100	"
		"	58								"		GND	GND	GND	7.0 V	GND		"	2CLK		"	"
	I_0 4/	3011	59				GND	2.5 V			"							5.0 V	"	1Q	9/	9/	mA
		"	60				5.0 V		2.25 V		"							GND	"	1 $\overline{Q}$	"	"	"
		"	61							2.25 V	"		5.0 V				GND		"	2 $\overline{Q}$	"	"	"
		"	62								"	2.25 V	GND				5.0 V		"	2Q	"	"	"
	I_{CC}	3005	63	GND	GND	GND	GND				"		GND	GND	GND	GND	5.5 V	5.5 V	"	V_{CC}		4.5	"
		"	64	GND	GND	GND	5.5 V				"		5.5 V	GND	GND	GND	GND	GND	"	V_{CC}		"	"
2	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = +125°C and V_{IC} tests are omitted.																						
3	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = -55°C and V_{IC} tests are omitted.																						
7 Tc = 25°C 10/	Truth table tests	3014	65	B	B	A	A	L	H	H	GND	L	A	A	B	B	B	B	5.0 V	All outputs	6/	6/	
		"	66	A	"	"	"	"	"	"	"	"	"	"	"	A	"	"	"	"	"	"	
		"	67	B	"	"	"	"	"	"	"	"	"	"	"	B	"	"	"	"	"	"	
		"	68	"	A	B	B	H	L	L	"	H	B	B	A	"	A	A	"	"	"	"	
		"	69	A	"	"	"	"	"	"	"	"	"	"	"	A	"	"	"	"	"	"	
		"	70	B	"	"	"	"	"	"	"	"	"	"	"	B	"	"	"	"	"	"	
		"	71	"	B	"	A	L	H	H	"	L	A	"	B	"	B	B	"	"	"	"	
		"	72	"	"	"	"	"	"	"	"	"	"	"	"	"	A	A	"	"	"	"	
		"	73	A	"	"	"	"	"	"	"	"	"	"	"	A	"	"	"	"	"	"	
		"	74	B	"	"	"	"	"	"	"	"	"	"	"	B	"	"	"	"	"	"	
		"	75	"	"	"	B	H	L	L	"	H	B	"	"	"	"	"	"	"	"	"	
		"	76	"	"	"	A	"	"	"	"	"	A	"	"	"	"	"	"	"	"	"	
		"	77	A	"	"	"	"	"	"	"	"	"	"	"	A	"	"	"	"	"	"	
		"	78	B	"	"	"	"	"	"	"	"	"	"	"	B	"	"	"	"	"	"	
		"	79	"	"	A	"	L	H	H	"	L	"	A	"	"	B	B	"	"	"	"	
		"	80	"	"	"	"	"	"	"	"	"	"	"	"	"	A	A	"	"	"	"	
		"	81	A	"	"	"	"	"	"	"	"	"	"	"	A	"	"	"	"	"	"	
		"	82	B	"	"	"	H	L	L	"	H	"	"	"	B	"	"	"	"	"	"	
		"	83	"	A	B	B	"	"	"	"	"	B	B	A	"	"	"	"	"	"	"	
		"	84	"	"	"	A	"	"	"	"	"	A	"	"	"	"	"	"	"	"	"	
		"	85	A	"	"	"	"	"	"	"	"	"	"	"	A	"	"	"	"	"	"	
		"	86	B	"	"	"	L	H	H	"	L	"	"	"	B	"	"	"	"	"	"	
		"	87	A	"	A	B	H	"	"	"	H	B	A	"	A	B	B	"	"	"	"	
		"	88	B	"	"	A	L	"	"	"	L	A	"	"	B	"	"	"	"	"	"	
		"	89	"	"	"	"	"	"	"	"	"	"	"	"	"	A	A	"	"	"	"	
		"	90	A	"	"	"	"	"	"	"	"	"	"	"	A	"	"	"	"	"	"	
		"	91	B	"	"	"	H	L	L	"	H	"	"	"	B	"	"	"	"	"	"	
		"	92	A	"	"	"	"	"	"	"	"	"	"	"	A	"	"	"	"	"	"	
		"	93	B	"	"	"	L	H	H	"	L	"	"	"	B	"	"	"	"	"	"	

See footnotes at end of device types 03.

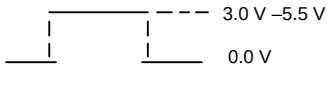
TABLE III. Group A inspection for device type 03.

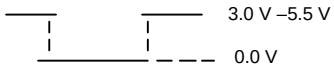
Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 2	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured terminal	Limits		Unit
			Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		Min	Max	
			Test no.	1CLK	1K	1J	$1\overline{PR}$	1Q	$1\overline{Q}$	$2\overline{Q}$	GND	2Q	$2\overline{PR}$	2J	2K	2CLK	$2\overline{CLR}$	$1\overline{CLR}$	V_{CC}				
8	Same tests, terminal conditions, and limits as for subgroup 7, except T_C = +125°C and -55°C.																						
9	f_{MAX}	Fig. 4	94	IN	3.5 V	3.5 V	3.5 V	OUT			GND							3.5 V	5.0 V	1Q	25		MHz
Tc = 25°C	7/	"	95	IN	3.5 V	3.5 V	3.5 V		OUT		"							3.5 V	"	$1\overline{Q}$	"		"
		"	96							OUT	"		3.5 V	3.5 V	3.5 V	IN	3.5 V		"	$2\overline{Q}$	"		"
		"	97								"	OUT	3.5 V	3.5 V	3.5 V	IN	3.5 V		"	2Q	"		"
	t_{PLH1}	3003	98	IN	3.5 V	GND	IN	OUT			"							3.5 V	"	$1\overline{PR}$ to 1Q	3	15	ns
		"	99	IN	GND	3.5 V	3.5 V		OUT		"							IN	"	$1\overline{CLR}$ to $1\overline{Q}$	"	"	"
		"	100							OUT	"		3.5 V	3.5 V	GND	IN	IN		"	$2\overline{CLR}$ to $2\overline{Q}$	"	"	"
		"	101								"	OUT	IN	GND	3.5 V	IN	3.5 V		"	$2\overline{PR}$ to $2\overline{Q}$	"	"	"
	t_{PHL1}	"	102	IN	3.5 V	GND	IN		OUT		"							3.5 V	"	$1\overline{PR}$ to $1\overline{Q}$	4	18	"
		"	103	IN	GND	3.5 V	3.5 V	OUT			"							IN	"	$1\overline{CLR}$ to 1Q	"	"	"
		"	104								"	OUT	3.5 V	3.5 V	GND	IN	IN		"	$2\overline{CLR}$ to 2Q	"	"	"
		"	105							OUT	"		IN	GND	3.5 V	IN	3.5 V		"	$2\overline{PR}$ to $2\overline{Q}$	"	"	"
	t_{PLH2}	"	106	IN	3.5 V	3.5 V	3.5 V	OUT			"							3.5 V	"	1CLK to 1Q	3	15	"
		"	107	IN	3.5 V	3.5 V	3.5 V		OUT		"							3.5 V	"	1CLK to $1\overline{Q}$	"	"	"
		"	108							OUT	"		3.5 V	3.5 V	3.5 V	IN	3.5 V		"	2CLK to $2\overline{Q}$	"	"	"
		"	109								"	OUT	3.5 V	3.5 V	3.5 V	IN	3.5 V		"	2CLK to 2Q	"	"	"
	t_{PHL2}	"	110	IN	3.5 V	3.5 V	3.5 V	OUT			"							3.5 V	"	1CLK to 1Q	5	19	"
		"	111	IN	3.5 V	3.5 V	3.5 V		OUT		"							3.5 V	"	1CLK to $1\overline{Q}$	"	"	"
		"	112							OUT	"		3.5 V	3.5 V	3.5 V	IN	3.5 V		"	2CLK to $2\overline{Q}$	"	"	"
		"	113								"	OUT	3.5 V	3.5 V	3.5 V	IN	3.5 V		"	2CLK to 2Q	"	"	"
10	f_{MAX} 7/	Same tests and terminal conditions as for subgroup 9, except T_C = +125°C.																			25		MHz
Tc = 125°C	t_{PLH1}																				3	20	ns
	t_{PHL1}																				4	22	"
	t_{PLH2}																				3	18	"
	t_{PHL2}																				5	23	"
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																						

See footnotes at end of device types 03.

1/ pins not referenced are N/C.

2/ 

3/ 

4/ Method 3011 shall be used, except the output voltage shall be as specified herein, and the output current shall be operating rather than short circuit current. The output conditions have been chosen to produce a current that closely approximates one half of the true short circuit output current $I_{os.}$

5/ Tests shall be performed in sequence, attributes data only.

6/ Output voltages shall be either: (1) H ≥ 2.5 V minimum and L ≤ 0.4 V maximum when using a high-speed checker double comparator; (2) H ≥ 1.5 V and L ≤ 1.5 V when using high-speed checker single comparator.

7/ f_{MAX} limit is the frequency of the input pulse. The output frequency shall be one-half the input frequency.

8/ I_{IL} limits shall be as follows:

Test	Min/Max limits in (µA) for circuit		
	A	B	C
I_{IL2}	0/-200	0/-200	0/-200
I_{IL4}	0/-400	0/-400	0/-400

9/ I_0 limits are as follows:

Test	Min/Max limits in (mA) for circuit		
	A	B	C
I_0	-20/-112	-30/-112	-30/-112

10/ A = 3.0 V minimum; B = 0.0 V or GND.

TABLE III. Group A inspection for device type 04.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 2, R, S Test no.	1 $\overline{OC}$	2 1D	3 2D	4 3D	5 4D	6 5D	7 6D	8 7D	9 8D	10 GND	11 CLK	12 8Q	13 7Q	14 6Q	15 5Q	16 4Q	17 3Q	18 2Q	19 1Q	20 V_{CC}	Measured terminal	Limits Min	Limits Max	Unit
1 Tc = 25°C	V_{OH}	3006	1	0.8 V	2.0 V								GND	1/								-1.0 mA	4.5 V	1Q	2.4		V
		"	2	"		2.0 V							"	"							-1.0 mA		"	2Q	"		"
		"	3	"			2.0 V						"	"						-1.0 mA			"	3Q	"		"
		"	4	"				2.0 V					"	"					-1.0 mA				"	4Q	"		"
		"	5	"					2.0 V				"	"				-1.0 mA					"	5Q	"		"
		"	6	"						2.0 V			"	"			-1.0 mA						"	6Q	"		"
		"	7	"							2.0 V		"	"		-1.0 mA							"	7Q	"		"
		"	8	"								2.0 V	"	"	-1.0 mA								"	8Q	"		"
	V_{OL}	3007	9	"	0.8 V								"	"								12 mA	"	1Q		0.4	"
		"	10	"		0.8 V							"	"							12 mA		"	2Q		"	"
		"	11	"			0.8 V						"	"						12 mA			"	3Q		"	"
		"	12	"				0.8 V					"	"					12 mA				"	4Q		"	"
		"	13	"					0.8 V				"	"				12 mA					"	5Q		"	"
		"	14	"						0.8 V			"	"			12 mA						"	6Q		"	"
		"	15	"							0.8 V		"	"		12 mA							"	7Q		"	"
		"	16	"								0.8 V	"	"	12 mA								"	8Q		"	"
	V_{IC}		17	-18 mA									"										"	$\overline{OC}$		-1.5	"
			18		-18 mA								"										"	1D		"	"
			19			-18 mA							"										"	2D		"	"
			20				-18 mA						"										"	3D		"	"
			21					-18 mA					"										"	4D		"	"
			22						-18 mA				"										"	5D		"	"
			23							-18 mA			"										"	6D		"	"
			24								-18 mA		"										"	7D		"	"
			25									-18 mA	"										"	8D		"	"
			26										"	-18 mA									"	CLK		"	"
	I_{IL3}	3009	27	0.4 V									"										5.5 V	$\overline{OC}$	6/	6/	µA
		"	28		0.4 V								"										"	1D	"	"	"
		"	29			0.4 V							"										"	2D	"	"	"
		"	30				0.4 V						"										"	3D	"	"	"
		"	31					0.4 V					"										"	4D	"	"	"
		"	32						0.4 V				"										"	5D	"	"	"
		"	33							0.4 V			"										"	6D	"	"	"
		"	34								0.4 V		"										"	7D	"	"	"
		"	35									0.4 V	"										"	8D	"	"	"
		"	36										"	0.4 V									"	CLK	"	"	"
	I_{IH3}	3010	37	2.7 V									"										"	$\overline{OC}$		20	"
		"	38		2.7 V								"										"	1D		"	"
		"	39			2.7 V							"										"	2D		"	"
		"	40				2.7 V						"										"	3D		"	"
		"	41					2.7 V					"										"	4D		"	"
		"	42						2.7 V				"										"	5D		"	"
		"	43							2.7 V			"										"	6D		"	"
		"	44								2.7 V		"										"	7D		"	"
		"	45									2.7 V	"										"	8D		"	"
		"	46										"	2.7 V									"	CLK		"	"
	I_{IH8}	"	47	7.0 V									"										"	$\overline{OC}$		100	"
		"	48		7.0 V								"										"	1D		"	"
		"	49			7.0 V							"										"	2D		"	"
		"	50				7.0 V						"										"	3D		"	"
		"	51					7.0 V					"										"	4D		"	"
		"	52						7.0 V				"										"	5D		"	"
		"	53							7.0 V			"										"	6D		"	"
		"	54								7.0 V		"										"	7D		"	"
		"	55									7.0 V	"										"	8D		"	"
		"	56										"	7.0 V									"	CLK		"	"

See footnotes at end of device types 04.

TABLE III. Group A inspection for device type 04.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 2, R, S Test no.	1 $\overline{OC}$	2 1D	3 2D	4 3D	5 4D	6 5D	7 6D	8 7D	9 8D	10 GND	11 CLK	12 8Q	13 7Q	14 6Q	15 5Q	16 4Q	17 3Q	18 2Q	19 1Q	20 V_{CC}	Measured terminal	Limits Min	Limits Max	Unit
1 Tc = 25°C	I_O 2/	3011	57	GND	5.0 V								GND	1/								2.25 V	5.5 V	1Q	8 /	8 /	mA
		"	58	"		5.0 V							"	"							2.25 V		"	2Q	"	"	"
		"	59	"			5.0 V						"	"						2.25 V			"	3Q	"	"	"
		"	60	"				5.0 V					"	"					2.25 V				"	4Q	"	"	"
		"	61	"					5.0 V				"	"				2.25 V					"	5Q	"	"	"
		"	62	"						5.0 V			"	"			2.25 V						"	6Q	"	"	"
		"	63	"							5.0 V		"	"		2.25 V							"	7Q	"	"	"
		"	64	"								5.0 V	"	"	2.25 V								"	8Q	"	"	"
	I_{OZH}		65	5.0 V	2.0 V								"	"								2.7 V	"	1Q		20	µA
			66	"		2.0 V							"	"							2.7 V		"	2Q		"	"
			67	"			2.0 V						"	"						2.7 V			"	3Q		"	"
			68	"				2.0 V					"	"					2.7 V				"	4Q		"	"
			69	"					2.0 V				"	"				2.7 V					"	5Q		"	"
			70	"						2.0 V			"	"			2.7 V						"	6Q		"	"
			71	"							2.0 V		"	"		2.7 V							"	7Q		"	"
			72	"								2.0 V	"	"	2.7 V								"	8Q		"	"
	I_{OZL}		73	5.0 V	0.8 V								"	"								0.4 V	"	1Q		-20	"
			74	"		0.8 V							"	"							0.4 V		"	2Q		"	"
			75	"			0.8 V						"	"						0.4 V			"	3Q		"	"
			76	"				0.8 V					"	"					0.4 V				"	4Q		"	"
			77	"					0.8 V				"	"				0.4 V					"	5Q		"	"
			78	"						0.8 V			"	"			0.4 V						"	6Q		"	"
			79	"							0.8 V		"	"		0.4 V							"	7Q		"	"
			80	"								0.8 V	"	"	0.4 V								"	8Q		"	"
	I_{CCH}	3005	81	GND	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	"	1/									"	V_{CC}		18	mA
	I_{CCL}	"	82	"	GND	GND	GND	GND	GND	GND	GND	GND	"	"									"	V_{CC}		27	"
	I_{CCZ}	"	83	5.0 V	GND	GND	GND	GND	GND	GND	GND	GND	"	"									"	V_{CC}		28	"
2	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = +125°C and V_{IC} tests are omitted.																										
3	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = -55°C and V_{IC} tests are omitted.																										
7 3/ Tc = 25°C	Truth	3014	84	B	A	A	A	A	A	A	A	A	GND	B	X	X	X	X	X	X	X	X	5.0 V	All	4/	4/	
	Table	"	85	"	A	A	A	A	A	A	A	A	"	A	H	H	H	H	H	H	H	H	"	outputs	"	"	
	Tests	"	86	"	B	B	B	B	B	B	B	B	"	A	"	"	"	"	"	"	"	"	"	"	"	"	
	7/	"	87	"	"	"	"	"	"	"	"	"	"	B	"	"	"	"	"	"	"	"	"	"	"	"	
		"	88	"	"	"	"	"	"	"	"	"	"	A	L	L	L	L	L	L	L	L	"	"	"	"	
		"	89	"	A	A	A	A	A	A	A	A	"	B	L	L	L	L	L	L	L	L	"	"	"	"	
		"	90	"	A	A	A	A	A	A	A	A	"	A	H	H	H	H	H	H	H	H	"	"	"	"	
8	Same tests, terminal conditions, and limits as for subgroup 7, except T_C = +125°C and -55°C.																										
9 Tc = 25°C	f_{MAX}	Fig. 4	91	GND	IN								"	IN								OUT	5.0 V	1D	35		MHz
	5/	"	92	"		IN							"	"							OUT		"	2D	"		"
		"	93	"			IN						"	"						OUT			"	3D	"		"
		"	94	"				IN					"	"					OUT				"	4D	"		"
		"	95	"					IN				"	"				OUT					"	5D	"		"
		"	96	"						IN			"	"			OUT						"	6D	"		"
		"	97	"							IN		"	"		OUT							"	7D	"		"
		"	98	"								IN	"	"	OUT								"	8D	"		"

See footnotes at end of device types 04.

TABLE III. Group A inspection for device type 04.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 2, R, S Test no.	1 $\overline{OC}$	2 1D	3 2D	4 3D	5 4D	6 5D	7 6D	8 7D	9 8D	10 GND	11 CLK	12 8Q	13 7Q	14 6Q	15 5Q	16 4Q	17 3Q	18 2Q	19 1Q	20 V_{CC}	Measured terminal	Limits Min	Limits Max	Unit
9	t_{PLH2}	3003	99	GND	IN								GND	IN								OUT	5.0 V	CLK to 1Q	4	14	ns
Tc = 25°C		Fig. 4	100	"		IN							"	"							OUT		"	CLK to 2Q	"	"	"
		"	101	"			IN						"	"						OUT			"	CLK to 3Q	"	"	"
		"	102	"				IN					"	"					OUT				"	CLK to 4Q	"	"	"
		"	103	"					IN				"	"				OUT					"	CLK to 5Q	"	"	"
		"	104	"						IN			"	"			OUT						"	CLK to 6Q	"	"	"
		"	105	"							IN		"	"		OUT							"	CLK to 7Q	"	"	"
		"	106	"								IN	"	"	OUT								"	CLK to 8Q	"	"	"
	t_{PHL2}	3007	107	"	IN								"	"								OUT	"	CLK to 1Q	"	"	"
		"	108	"		IN							"	"							OUT		"	CLK to 2Q	"	"	"
		"	109	"			IN						"	"						OUT			"	CLK to 3Q	"	"	"
		"	110	"				IN					"	"					OUT				"	CLK to 4Q	"	"	"
		"	111	"					IN				"	"				OUT					"	CLK to 5Q	"	"	"
		"	112	"						IN			"	"			OUT						"	CLK to 6Q	"	"	"
		"	113	"							IN		"	"		OUT							"	CLK to 7Q	"	"	"
		"	114	"								IN	"	"	OUT								"	CLK to 8Q	"	"	"
	t_{PZL}	"	115	IN	GND								"	1/								OUT	"	$\overline{OC}$ to 1Q	"	18	"
		"	116	"		GND							"	"							OUT		"	$\overline{OC}$ to 2Q	"	"	"
		"	117	"			GND						"	"						OUT			"	$\overline{OC}$ to 3Q	"	"	"
		"	118	"				GND					"	"					OUT				"	$\overline{OC}$ to 4Q	"	"	"
		"	119	"					GND				"	"				OUT					"	$\overline{OC}$ to 5Q	"	"	"
		"	120	"						GND			"	"			OUT						"	$\overline{OC}$ to 6Q	"	"	"
		"	121	"							GND		"	"		OUT							"	$\overline{OC}$ to 7Q	"	"	"
		"	122	"								GND	"	"	OUT								"	$\overline{OC}$ to 8Q	"	"	"
	t_{PZH}	"	123	"	5.0 V								"	"								OUT	"	$\overline{OC}$ to 1Q	"	"	"
		"	124	"		5.0 V							"	"							OUT		"	$\overline{OC}$ to 2Q	"	"	"
		"	125	"			5.0 V						"	"						OUT			"	$\overline{OC}$ to 3Q	"	"	"
		"	126	"				5.0 V					"	"					OUT				"	$\overline{OC}$ to 4Q	"	"	"
		"	127	"					5.0 V				"	"				OUT					"	$\overline{OC}$ to 5Q	"	"	"
		"	128	"						5.0 V			"	"			OUT						"	$\overline{OC}$ to 6Q	"	"	"
		"	129	"							5.0 V		"	"		OUT							"	$\overline{OC}$ to 7Q	"	"	"
		"	130	"								5.0 V	"	"	OUT								"	$\overline{OC}$ to 8Q	"	"	"
	t_{PLZ}	"	131	"	GND								"	"								OUT	"	$\overline{OC}$ to 1Q	2	12	"
		"	132	"		GND							"	"							OUT		"	$\overline{OC}$ to 2Q	"	"	"
		"	133	"			GND						"	"						OUT			"	$\overline{OC}$ to 3Q	"	"	"
		"	134	"				GND					"	"					OUT				"	$\overline{OC}$ to 4Q	"	"	"
		"	135	"					GND				"	"				OUT					"	$\overline{OC}$ to 5Q	"	"	"
		"	136	"						GND			"	"			OUT						"	$\overline{OC}$ to 6Q	"	"	"
		"	137	"							GND		"	"		OUT							"	$\overline{OC}$ to 7Q	"	"	"
		"	138	"								GND	"	"	OUT								"	$\overline{OC}$ to 8Q	"	"	"

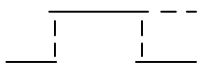
See footnotes at end of device types 04.

TABLE III. Group A inspection for device type 04.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 2, R, S Test no.	1 $\overline{OC}$	2 1D	3 2D	4 3D	5 4D	6 5D	7 6D	8 7D	9 8D	10 GND	11 CLK	12 8Q	13 7Q	14 6Q	15 5Q	16 4Q	17 3Q	18 2Q	19 1Q	20 V_{CC}	Measured terminal	Limits Min	Limits Max	Unit
9 Tc = 25°C	t_{PHZ}	3003 Fig. 4	139	"	5.0 V								GND	1/								OUT	5.0 V	$\overline{OC}$ to 1Q	2	10	"
		"	140	"		5.0 V							"	"							OUT		"	$\overline{OC}$ to 2Q	"	"	"
		"	141	"			5.0 V						"	"						OUT			"	$\overline{OC}$ to 3Q	"	"	"
		"	142	"				5.0 V					"	"					OUT				"	$\overline{OC}$ to 4Q	"	"	"
		"	143	"					5.0 V				"	"				OUT					"	$\overline{OC}$ to 5Q	"	"	"
		"	144	"						5.0 V			"	"			OUT						"	$\overline{OC}$ to 6Q	"	"	"
		"	145	"							5.0 V		"	"		OUT							"	$\overline{OC}$ to 7Q	"	"	"
		"	146	"								5.0 V	"	"	OUT								"	$\overline{OC}$ to 8Q	"	"	"
10 Tc = 25°C	f_{MAX}	Same tests and terminal conditions as for subgroup 7, except T_C = +125°C.																							30		MHz
	t_{PLH2}																								4	18	ns
	t_{PHL2}																								"	17	"
	t_{PZL}																								"	21	"
	t_{PZH}																								"	"	"
	t_{PLZ}																								2	18	"
	t_{PHZ}																								2	12	"
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																										

See footnotes at end of device types 04.

1/ Apply  3.0 V –5.5 V

0.0 V pulse prior to test.

2/ Method 3011 shall be used, except the output voltage shall be as specified herein, and the output current shall be operating rather than short circuit current. The output conditions have been chosen to produce a current that closely approximates one half of the true short circuit output current $I_{os.}$

3/ Tests shall be performed in sequence, attributes data only.

4/ Output voltages shall be either: (1) H ≥ 2.4 V minimum and L ≤ 0.4 V maximum when using a high-speed checker double comparator; (2) H ≥ 1.5 V and L ≤ 1.5 V when using high-speed checker single comparator.

5/ f_{MAX} limit is the frequency of the input pulse. The output frequency shall be one-half the input frequency.

6/ I_{IL} limits shall be as follows:

Test	Min/Max limits in (μA) for circuit		
	A	B	C
I_{IL3}	0/-200	0/-200	0/-200

7/ A = 3.0 V minimum; B = 0.0 V or GND.

8/

Test	Min/Max limits in mA		
	A	B	C
I_0	-20/-112	-30/-112	-30/-112

TABLE III. Group A inspection for device type 05.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 2, R, S Test no.	1 $\overline{OC}$	2 1D	3 2D	4 3D	5 4D	6 5D	7 6D	8 7D	9 8D	10 GND	11 CLK	12 8 $\overline{Q}$	13 7 $\overline{Q}$	14 6 $\overline{Q}$	15 5 $\overline{Q}$	16 4 $\overline{Q}$	17 3 $\overline{Q}$	18 2 $\overline{Q}$	19 1 $\overline{Q}$	20 V_{CC}	Measured terminal	Limits Min	Limits Max	Unit
1 Tc = 25°C	V_{OH}	3006	1	0.8 V	0.8 V								GND	1/								-1.0 mA	4.5 V	1 $\overline{Q}$	2.4		V
		"	2	"		0.8 V							"	"							-1.0 mA		"	2 $\overline{Q}$	"		"
		"	3	"			0.8 V						"	"						-1.0 mA			"	3 $\overline{Q}$	"		"
		"	4	"				0.8 V					"	"					-1.0 mA				"	4 $\overline{Q}$	"		"
		"	5	"					0.8 V				"	"				-1.0 mA					"	5 $\overline{Q}$	"		"
		"	6	"						0.8 V			"	"			-1.0 mA						"	6 $\overline{Q}$	"		"
		"	7	"							0.8 V		"	"		-1.0 mA							"	7 $\overline{Q}$	"		"
		"	8	"								0.8 V	"	"	-1.0 mA								"	8 $\overline{Q}$	"		"
	V_{OL}	3007	9	"	2.0 V								"	"								12 mA	"	1 $\overline{Q}$		0.4	"
		"	10	"		2.0 V							"	"							12 mA		"	2 $\overline{Q}$		"	"
		"	11	"			2.0 V						"	"						12 mA			"	3 $\overline{Q}$		"	"
		"	12	"				2.0 V					"	"					12 mA				"	4 $\overline{Q}$		"	"
		"	13	"					2.0 V				"	"				12 mA					"	5 $\overline{Q}$		"	"
		"	14	"						2.0 V			"	"			12 mA						"	6 $\overline{Q}$		"	"
		"	15	"							2.0 V		"	"		12 mA							"	7 $\overline{Q}$		"	"
		"	16	"								2.0 V	"	"	12 mA								"	8 $\overline{Q}$		"	"
	V_{IC}		17	-18 mA									"										"	$\overline{OC}$		-1.5	"
			18		-18 mA								"										"	1D		"	"
			19			-18 mA							"										"	2D		"	"
			20				-18 mA						"										"	3D		"	"
			21					-18 mA					"										"	4D		"	"
			22						-18 mA				"										"	5D		"	"
			23							-18 mA			"										"	6D		"	"
			24								-18 mA		"										"	7D		"	"
			25									-18 mA	"										"	8D		"	"
			26										"	-18 mA									"	CLK		"	"
	I_{IL3}	3009	27	0.4 V									"										5.5 V	$\overline{OC}$	6/	6/	µA
	"		28		0.4 V								"										"	1D	"	"	"
	"		29			0.4 V							"										"	2D	"	"	"
	"		30				0.4 V						"										"	3D	"	"	"
	"		31					0.4 V					"										"	4D	"	"	"
	"		32						0.4 V				"										"	5D	"	"	"
	"		33							0.4 V			"										"	6D	"	"	"
	"		34								0.4 V		"										"	7D	"	"	"
	"		35									0.4 V	"										"	8D	"	"	"
	"		36										"	0.4 V									"	CLK	"	"	"
	I_{IH3}	3010	37	2.7 V									"										"	$\overline{OC}$		20	"
	"		38		2.7 V								"										"	1D		"	"
	"		39			2.7 V							"										"	2D		"	"
	"		40				2.7 V						"										"	3D		"	"
	"		41					2.7 V					"										"	4D		"	"
	"		42						2.7 V				"										"	5D		"	"
	"		43							2.7 V			"										"	6D		"	"
	"		44								2.7 V		"										"	7D		"	"
	"		45									2.7 V	"										"	8D		"	"
	"		46										"	2.7 V									"	CLK		"	"

See footnotes at end of device types 05.

TABLE III. Group A inspection for device type 05.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 2, R, S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Measured	Limits		Unit
			Test no.	$\overline{OC}$	1D	2D	3D	4D	5D	6D	7D	8D	GND	CLK	8 $\overline{Q}$	7 $\overline{Q}$	6 $\overline{Q}$	5 $\overline{Q}$	4 $\overline{Q}$	3 $\overline{Q}$	2 $\overline{Q}$	1 $\overline{Q}$	V_{CC}	terminal	Min	Max	
1 Tc = 25°C	I_{IH8}	"	47	7.0 V									GND										5.5 V	$\overline{OC}$		100	µA
		"	48		7.0 V								"										"	1D		"	"
		"	49			7.0 V							"										"	2D		"	"
		"	50				7.0 V						"										"	3D		"	"
		"	51					7.0 V					"										"	4D		"	"
		"	52						7.0 V				"										"	5D		"	"
		"	53							7.0 V			"										"	6D		"	"
		"	54								7.0 V		"										"	7D		"	"
		"	55									7.0 V	"										"	8D		"	"
		"	56										"	7.0 V									"	CLK		"	"
	I_o 2/	3011	57	GND	GND								"	1/								2.25 V	"	1 $\overline{Q}$	-15	-110	mA
		"	58			GND							"	"							2.25 V		"	2 $\overline{Q}$	"	"	"
		"	59				GND						"	"						2.25 V			"	3 $\overline{Q}$	"	"	"
		"	60					GND					"	"					2.25 V				"	4 $\overline{Q}$	"	"	"
		"	61						GND				"	"				2.25 V					"	5 $\overline{Q}$	"	"	"
		"	62							GND			"	"			2.25 V						"	6 $\overline{Q}$	"	"	"
		"	63								GND		"	"		2.25 V							"	7 $\overline{Q}$	"	"	"
		"	64									GND	"	"	2.25 V								"	8 $\overline{Q}$	"	"	"
	I_{0ZH}		65	5.0 V	0.8 V								"	"								2.7 V	"	1 $\overline{Q}$		20	µA
			66	"		0.8 V							"	"							2.7 V		"	2 $\overline{Q}$		"	"
			67	"			0.8 V						"	"						2.7 V			"	3 $\overline{Q}$		"	"
			68	"				0.8 V					"	"					2.7 V				"	4 $\overline{Q}$		"	"
			69	"					0.8 V				"	"				2.7 V					"	5 $\overline{Q}$		"	"
			70	"						0.8 V			"	"			2.7 V						"	6 $\overline{Q}$		"	"
			71	"							0.8 V		"	"		2.7 V							"	7 $\overline{Q}$		"	"
			72	"								0.8 V	"	"	2.7 V								"	8 $\overline{Q}$		"	"
	I_{0ZL}		73	"	2.0 V								"	"								0.4 V	"	1 $\overline{Q}$		-20	µA
			74	"		2.0 V							"	"							0.4 V		"	2 $\overline{Q}$		"	"
			75	"			2.0 V						"	"						0.4 V			"	3 $\overline{Q}$		"	"
			76	"				2.0 V					"	"					0.4 V				"	4 $\overline{Q}$		"	"
			77	"					2.0 V				"	"				0.4 V					"	5 $\overline{Q}$		"	"
			78	"						2.0 V			"	"			0.4 V						"	6 $\overline{Q}$		"	"
			79	"							2.0 V		"	"		0.4 V							"	7 $\overline{Q}$		"	"
			80	"								2.0 V	"	"	0.4 V								"	8 $\overline{Q}$		"	"
	I_{CCH}	3005	81	GND	GND	GND	GND	GND	GND	GND	GND	GND	"	"									"	V_{CC}		17	mA
	I_{CCL}	"	82	GND	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	"	"									"	V_{CC}		23	"
	I_{CCZ}	"	83	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	"	"									"	V_{CC}		27	"

See footnotes at end of device types 05.

TABLE III. Group A inspection for device type 05.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 2, R, S Test no.	1 $\overline{OC}$	2 1D	3 2D	4 3D	5 4D	6 5D	7 6D	8 7D	9 8D	10 GND	11 CLK	12 8 $\overline{Q}$	13 7 $\overline{Q}$	14 6 $\overline{Q}$	15 5 $\overline{Q}$	16 4 $\overline{Q}$	17 3 $\overline{Q}$	18 2 $\overline{Q}$	19 1 $\overline{Q}$	20 V_{CC}	Measured terminal	Limits Min	Limits Max	Unit
2	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = +125°C and V_{IC} tests are omitted.																										
3	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = -55°C and V_{IC} tests are omitted.																										
7 3/ Tc = 25°C	Truth table tests 7/	3014	84	B	B	B	B	B	B	B	B	B	GND	B	X	X	X	X	X	X	X	X	5.0 V	All outputs	4/	4/	
		"	85	"	B	B	B	B	B	B	B	B	"	A	H	H	H	H	H	H	H	H	"	"	"	"	
		"	86	"	A	A	A	A	A	A	A	A	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
		"	87	"	"	"	"	"	"	"	"	"	"	B	"	"	"	"	"	"	"	"	"	"	"	"	
		"	88	"	"	"	"	"	"	"	"	"	"	A	L	L	L	L	L	L	L	L	"	"	"	"	
		"	89	"	B	B	B	B	B	B	B	B	"	B	L	L	L	L	L	L	L	L	"	"	"	"	
		"	90	"	B	B	B	B	B	B	B	B	"	A	H	H	H	H	H	H	H	H	"	"	"	"	
8	Same tests, terminal conditions, and limits as for subgroup 7, except T_C = +125°C and -55°C.																										
9 Tc = 25°C	f_{MAX} 5/	Fig.4	91	GND	IN								"	IN								OUT	5.0 V	1 $\overline{Q}$	30		MHz
		"	92	"		IN							"	"							OUT		"	2 $\overline{Q}$	"		"
		"	93	"			IN						"	"						OUT			"	3 $\overline{Q}$	"		"
		"	94	"				IN					"	"					OUT				"	4 $\overline{Q}$	"		"
		"	95	"					IN				"	"				OUT					"	5 $\overline{Q}$	"		"
		"	96	"						IN			"	"			OUT						"	6 $\overline{Q}$	"		"
		"	97	"							IN		"	"		OUT							"	7 $\overline{Q}$	"		"
		"	98	"								IN	"	"	OUT								"	8 $\overline{Q}$	"		"
	t_{PLH2}	3003 Fig. 4	99	GND	IN								"	"								OUT	"	CLK to 1 $\overline{Q}$	4	12	ns
		"	100	"		IN							"	"							OUT		"	CLK to 2 $\overline{Q}$	"	"	"
		"	101	"			IN						"	"						OUT			"	CLK to 3 $\overline{Q}$	"	"	"
		"	102	"				IN					"	"					OUT				"	CLK to 4 $\overline{Q}$	"	"	"
		"	103	"					IN				"	"				OUT					"	CLK to 5 $\overline{Q}$	"	"	"
		"	104	"						IN			"	"			OUT						"	CLK to 6 $\overline{Q}$	"	"	"
		"	105	"							IN		"	"		OUT							"	CLK to 7 $\overline{Q}$	"	"	"
		"	106	"								IN	"	"	OUT								"	CLK to 8 $\overline{Q}$	"	"	"
	t_{PHL2}	"	107	"	IN								"	"								OUT	"	CLK to 1 $\overline{Q}$	"	"	"
		"	108	"		IN							"	"							OUT		"	CLK to 2 $\overline{Q}$	"	"	"
		"	109	"			IN						"	"						OUT			"	CLK to 3 $\overline{Q}$	"	"	"
		"	110	"				IN					"	"					OUT				"	CLK to 4 $\overline{Q}$	"	"	"
		"	111	"					IN				"	"				OUT					"	CLK to 5 $\overline{Q}$	"	"	"
		"	112	"						IN			"	"			OUT						"	CLK to 6 $\overline{Q}$	"	"	"
		"	113	"							IN		"	"		OUT							"	CLK to 7 $\overline{Q}$	"	"	"
		"	114	"								IN	"	"	OUT								"	CLK to 8 $\overline{Q}$	"	"	"

See footnotes at end of device types 05.

TABLE III. Group A inspection for device type 05.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

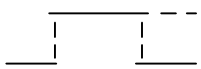
Subgroup	Symbol	MIL-STD-883 method	Cases 2, R, S Test no.	1 $\overline{OC}$	2 1D	3 2D	4 3D	5 4D	6 5D	7 6D	8 7D	9 8D	10 GND	11 CLK	12 $\overline{8Q}$	13 $\overline{7Q}$	14 $\overline{6Q}$	15 $\overline{5Q}$	16 $\overline{4Q}$	17 $\overline{3Q}$	18 $\overline{2Q}$	19 $\overline{1Q}$	20 V_{CC}	Measured terminal	Limits Min	Limits Max	Unit
9 Tc = 25°C	t_{PZL}	3003 Fig. 4	115	IN	5.0 V								GND	1/								OUT	5.0 V	$\overline{OC}$ to $1\overline{Q}$	4	18	ns
		"	116	"		5.0 V							"	"							OUT		"	$\overline{OC}$ to $2\overline{Q}$	"	"	"
		"	117	"			5.0 V						"	"						OUT			"	$\overline{OC}$ to $3\overline{Q}$	"	"	"
		"	118	"				5.0 V					"	"					OUT				"	$\overline{OC}$ to $4\overline{Q}$	"	"	"
		"	119	"					5.0 V				"	"				OUT					"	$\overline{OC}$ to $5\overline{Q}$	"	"	"
		"	120	"						5.0 V			"	"			OUT						"	$\overline{OC}$ to $6\overline{Q}$	"	"	"
		"	121	"							5.0 V		"	"		OUT							"	$\overline{OC}$ to $7\overline{Q}$	"	"	"
		"	122	"								5.0 V	"	"	OUT								"	$\overline{OC}$ to $8\overline{Q}$	"	"	"
	t_{PZH}	"	123	"	GND								"	"								OUT	"	$\overline{OC}$ to $1\overline{Q}$	"	"	"
		"	124	"		GND							"	"							OUT		"	$\overline{OC}$ to $2\overline{Q}$	"	"	"
		"	125	"			GND						"	"						OUT			"	$\overline{OC}$ to $3\overline{Q}$	"	"	"
		"	126	"				GND					"	"					OUT				"	$\overline{OC}$ to $4\overline{Q}$	"	"	"
		"	127	"					GND				"	"				OUT					"	$\overline{OC}$ to $5\overline{Q}$	"	"	"
		"	128	"						GND			"	"			OUT						"	$\overline{OC}$ to $6\overline{Q}$	"	"	"
		"	129	"							GND		"	"		OUT							"	$\overline{OC}$ to $7\overline{Q}$	"	"	"
		"	130	"								GND	"	"	OUT								"	$\overline{OC}$ to $8\overline{Q}$	"	"	"
	t_{PLZ}	"	131	"	5.0 V								"	"								OUT	"	$\overline{OC}$ to $1\overline{Q}$	3	8	"
		"	132	"		5.0 V							"	"							OUT		"	$\overline{OC}$ to $2\overline{Q}$	"	"	"
		"	133	"			5.0 V						"	"						OUT			"	$\overline{OC}$ to $3\overline{Q}$	"	"	"
		"	134	"				5.0 V					"	"					OUT				"	$\overline{OC}$ to $4\overline{Q}$	"	"	"
		"	135	"					5.0 V				"	"				OUT					"	$\overline{OC}$ to $5\overline{Q}$	"	"	"
		"	136	"						5.0 V			"	"			OUT						"	$\overline{OC}$ to $6\overline{Q}$	"	"	"
		"	137	"							5.0 V		"	"		OUT							"	$\overline{OC}$ to $7\overline{Q}$	"	"	"
		"	138	"								5.0 V	"	"	OUT								"	$\overline{OC}$ to $8\overline{Q}$	"	"	"
	t_{PLZ}	"	139	"	GND								"	"								OUT	"	$\overline{OC}$ to $1\overline{Q}$	2	13	"
		"	140	"		GND							"	"							OUT		"	$\overline{OC}$ to $2\overline{Q}$	"	"	"
		"	141	"			GND						"	"						OUT			"	$\overline{OC}$ to $3\overline{Q}$	"	"	"
		"	142	"				GND					"	"					OUT				"	$\overline{OC}$ to $4\overline{Q}$	"	"	"
		"	143	"					GND				"	"				OUT					"	$\overline{OC}$ to $5\overline{Q}$	"	"	"
		"	144	"						GND			"	"			OUT						"	$\overline{OC}$ to $6\overline{Q}$	"	"	"
		"	145	"							GND		"	"		OUT							"	$\overline{OC}$ to $7\overline{Q}$	"	"	"
		"	146	"								GND	"	"	OUT								"	$\overline{OC}$ to $8\overline{Q}$	"	"	"

See footnotes at end of device types 05.

TABLE III. Group A inspection for device type 05.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 2, R, S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Measured	Limits		Unit
			Test no.	$\overline{OC}$	1D	2D	3D	4D	5D	6D	7D	8D	GND	CLK	8 $\overline{Q}$	7 $\overline{Q}$	6 $\overline{Q}$	5 $\overline{Q}$	4 $\overline{Q}$	3 $\overline{Q}$	2 $\overline{Q}$	1 $\overline{Q}$	V_{CC}	terminal	Min	Max	
10 Tc = 25°C	f_{MAX}	Same tests and terminal conditions as for subgroup 7, except T_C = +125°C.																							30		MHz
	t_{PHL2}																								4	15	ns
	t_{PLH2}																								"	"	"
	t_{PZL}																								"	21	"
	t_{PZH}																								"	"	"
	t_{PLZ}																								2	10	"
	t_{PHZ}																								3	15	"
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																										

1/ Apply  3.0 V –5.5 V

0.0 V pulse prior to test.

2/ Method 3011 shall be used, except the output voltage shall be as specified herein, and the output current shall be operating rather than short circuit current. The output conditions have been chosen to produce a current that closely approximates one half of the true short circuit output current I_{os}.

3/ Tests shall be performed in sequence, attributes data only.

4/ Output voltages shall be either: (1) H ≥ 2.4 V minimum and L ≤ 0.4 V maximum when using a high-speed checker double comparator; (2) H ≥ 1.5 V and L ≤ 1.5 V when using high-speed checker single comparator.

5/ f_{MAX} limit is the frequency of the input pulse. The output frequency shall be one-half the input frequency.

6/ I_{IL} limits shall be as follows:

Test	Min/Max limits in (µA) for circuit		
	A	B	C
I_{IL3}	0/-200	0/-200	0/-200

7/ A = 3.0 V minimum; B = 0.0 V or GND.

TABLE III. Group A inspection for device type 06.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 3	2	3	4	5	6	7	9	10	11	12	13	14		Limits		Unit
			Cases L, K	1	2	3	4	5	6	7	8	9	10	11	12	Measured			
			Test no.	1 $\overline{\text{CLR}}$	1 $\overline{\text{OC}}$	1D1	1D2	1D3	1D4	2D1	2D2	2D3	2D4	2 $\overline{\text{OC}}$	GND	terminal	Min	Max	
1 Tc = 25°C	V_{OH}	3006	1	2.0 V	0.8 V	2.0 V									GND	1Q1	2.4		V
		"	2	"	"		2.0 V								"	1Q2	"		"
		"	3	"	"			2.0 V							"	1Q3	"		"
		"	4	"	"				2.0 V						"	1Q4	"		"
		"	5							2.0 V				0.8 V	"	2Q1	"		"
		"	6								2.0 V			"	"	2Q2	"		"
		"	7									2.0 V		"	"	2Q3	"		"
		"	8										2.0 V	"	"	2Q4	"		"
	V_{OL}	3007	9	2.0 V	0.8 V	0.8 V									"	1Q1		0.4 V	"
		"	10	"	"		0.8 V								"	1Q2		"	"
		"	11	"	"			0.8 V							"	1Q3		"	"
		"	12	"	"				0.8 V						"	1Q4		"	"
		"	13							0.8 V				0.8 V	"	2Q1		"	"
		"	14								0.8 V			"	"	2Q2		"	"
		"	15									0.8 V		"	"	2Q3		"	"
		"	16										0.8 V	"	"	2Q4		"	"
		"	17	0.8 V	0.8 V										"	1Q1		"	"
		"	18	"	"										"	1Q2		"	"
		"	19	"	"										"	1Q3		"	"
		"	20	"	"										"	1Q4		"	"
		"	21											0.8 V	"	2Q1		"	"
		"	22											"	"	2Q2		"	"
		"	23											"	"	2Q3		"	"
		"	24											"	"	2Q4		"	"
	V_{IC}		25	-18 mA											"	1 $\overline{\text{CLR}}$		-1.5	"
			26		-18 mA										"	1 $\overline{\text{OC}}$		"	"
			27			-18 mA									"	1D1		"	"
			28				-18 mA								"	1D2		"	"
			29					-18 mA							"	1D3		"	"
			30						-18 mA						"	1D4		"	"
			31							-18 mA					"	2D1		"	"
			32								-18 mA				"	2D2		"	"
			33									-18 mA			"	2D3		"	"
			34										-18 mA		"	2D4		"	"
			35											-18 mA	"	2 $\overline{\text{OC}}$		"	"
			36												"	2 $\overline{\text{CLR}}$		"	"
			37												"	2CLK		"	"
			38												"	1CLK		"	"
	I_{IL3}	3009	39	0.4 V											"	1 $\overline{\text{CLR}}$	7/	7/	µA
		"	40		0.4 V										"	1 $\overline{\text{OC}}$	"	"	"
		"	41			0.4 V									"	1D1	"	"	"
		"	42				0.4 V								"	1D2	"	"	"
		"	43					0.4 V							"	1D3	"	"	"
		"	44						0.4 V						"	1D4	"	"	"
		"	45							0.4 V					"	2D1	"	"	"
		"	46								0.4 V				"	2D2	"	"	"
		"	47									0.4 V			"	2D3	"	"	"
		"	48										0.4 V		"	2D4	"	"	"
		"	49											0.4 V	"	2 $\overline{\text{OC}}$	"	"	"
		"	50												"	2 $\overline{\text{CLR}}$	"	"	"
		"	51												"	2CLK	"	"	"
		"	52												"	1CLK	"	"	"

See footnotes at end of device types 06.

TABLE III. Group A inspection for device type 06.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 3	16	17	18	19	20	21	23	24	25	26	27	28		Limits		Unit
			Cases L, K	13	14	15	16	17	18	19	20	21	22	23	24	Measured			
			Test no.	2 $\overline{\text{CLR}}$	2CLK	2Q4	2Q3	2Q2	2Q1	1Q4	1Q3	1Q2	1Q1	1CLK	V_{CC}	terminal	Min	Max	
1	V_{OH}	3006	1										-1.0 mA	2/	4.5 V	1Q1	2.4		V
Tc = 25°C		"	2									-1.0 mA		"	"	1Q2	"		"
		"	3								-1.0 mA			"	"	1Q3	"		"
		"	4							-1.0 mA				"	"	1Q4	"		"
		"	5	2.0 V	2/				-1.0 mA						"	2Q1	"		"
		"	6	"	"			-1.0 mA							"	2Q2	"		"
		"	7	"	"		-1.0 mA								"	2Q3	"		"
		"	8	"	"	-1.0 mA									"	2Q4	"		"
	V_{OL}	"	9										12 mA	2/	"	1Q1		0.4	"
		"	10									12 mA		"	"	1Q2		"	"
		"	11								12 mA			"	"	1Q3		"	"
		"	12							12 mA				"	"	1Q4		"	"
		"	13	2.0 V	2/				12 mA						"	2Q1		"	"
		"	14	"	"			12 mA							"	2Q2		"	"
		"	15	"	"		12 mA								"	2Q3		"	"
		"	16	"	"	12 mA									"	2Q4		"	"
		"	17										12 mA		"	1Q1		"	"
		"	18									12 mA			"	1Q2		"	"
		"	19								12 mA				"	1Q3		"	"
		"	20							12 mA					"	1Q4		"	"
		"	21	0.8 V					12 mA						"	2Q1		"	"
		"	22	"				12 mA							"	2Q2		"	"
		"	23	"			12 mA								"	2Q3		"	"
		"	24	"		12 mA									"	2Q4		"	"
	V_{IC}		25												"	1 $\overline{\text{CLR}}$		-1.5	"
			26												"	1 $\overline{\text{OC}}$		"	"
			27												"	1D1		"	"
			28												"	1D2		"	"
			29												"	1D3		"	"
			30												"	1D4		"	"
			31												"	2D1		"	"
			32												"	2D2		"	"
			33												"	2D3		"	"
			34												"	2D4		"	"
			35												"	2 $\overline{\text{OC}}$		"	"
			36	-18 mA											"	2 $\overline{\text{CLR}}$		"	"
			37		-18 mA										"	2CLK		"	"
			38											-18 mA	"	1CLK		"	"
	I_{IL3}	3009	39												5.5 V	1 $\overline{\text{CLR}}$	7/	7/	µA
		"	40												"	1 $\overline{\text{OC}}$	"	"	"
		"	41												"	1D1	"	"	"
		"	42												"	1D2	"	"	"
		"	43												"	1D3	"	"	"
		"	44												"	1D4	"	"	"
		"	45												"	2D1	"	"	"
		"	46												"	2D2	"	"	"
		"	47												"	2D3	"	"	"
		"	48												"	2D4	"	"	"
		"	49												"	2 $\overline{\text{OC}}$	"	"	"
		"	50	0.4 V											"	2 $\overline{\text{CLR}}$	"	"	"
		"	51		0.4 V										"	2CLK	"	"	"
		"	52											0.4 V	"	1CLK	"	"	"

See footnotes at end of device types 06.

TABLE III. Group A inspection for device type 06.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 3	2	3	4	5	6	7	9	10	11	12	13	14		Limits		Unit
			Cases L, K	1	2	3	4	5	6	7	8	9	10	11	12	Measured			
			Test no.	1 $\overline{\text{CLR}}$	1 $\overline{\text{OC}}$	1D1	1D2	1D3	1D4	2D1	2D2	2D3	2D4	2 $\overline{\text{OC}}$	GND	terminal	Min	Max	
1	I_{IH3}	3010	53	2.7 V											GND	1 $\overline{\text{CLR}}$		20	µA
Tc = 25°C		"	54		2.7 V										"	1 $\overline{\text{OC}}$		"	"
		"	55			2.7 V									"	1D1		"	"
		"	56				2.7 V								"	1D2		"	"
		"	57					2.7 V							"	1D3		"	"
		"	58						2.7 V						"	1D4		"	"
		"	59							2.7 V					"	2D1		"	"
		"	60								2.7 V				"	2D2		"	"
		"	61									2.7 V			"	2D3		"	"
		"	62										2.7 V		"	2D4		"	"
		"	63											2.7 V	"	2 $\overline{\text{OC}}$		"	"
		"	64												"	2 $\overline{\text{CLR}}$		"	"
		"	65												"	2CLK		"	"
		"	66												"	1CLK		"	"
	I_{IH8}	"	67	7.0 V											"	1 $\overline{\text{CLR}}$		100	"
		"	68		7.0 V										"	1 $\overline{\text{OC}}$		"	"
		"	69			7.0 V									"	1D1		"	"
		"	70				7.0 V								"	1D2		"	"
		"	71					7.0 V							"	1D3		"	"
		"	72						7.0 V						"	1D4		"	"
		"	73							7.0 V					"	2D1		"	"
		"	74								7.0 V				"	2D2		"	"
		"	75									7.0 V			"	2D3		"	"
		"	76										7.0 V		"	2D4		"	"
		"	77											7.0 V	"	2 $\overline{\text{OC}}$		"	"
		"	78												"	2 $\overline{\text{CLR}}$		"	"
		"	79												"	2CLK		"	"
		"	80												"	1CLK		"	"
	I_O	3011 3/	81	5.0 V	GND	5.0 V									"	1Q1	-15	-110	mA
		"	82	"	"		5.0 V								"	1Q2	"	"	"
		"	83	"	"			5.0 V							"	1Q3	"	"	"
		"	84	"	"				5.0 V						"	1Q4	"	"	"
		"	85							5.0 V				GND	"	2Q1	"	"	"
		"	86								5.0 V			"	"	2Q2	"	"	"
		"	87									5.0 V		"	"	2Q3	"	"	"
		"	88										5.0 V	"	"	2Q4	"	"	"
	I_{OZH}		89	5.0 V	5.0 V	5.0 V									"	1Q1		20	µA
			90	"	"		5.0 V								"	1Q2		"	"
			91	"	"			5.0 V							"	1Q3		"	"
			92	"	"				5.0 V						"	1Q4		"	"
			93							5.0 V				5.0 V	"	2Q1		"	"
			94								5.0 V			"	"	2Q2		"	"
			95									5.0 V		"	"	2Q3		"	"
			96										5.0 V	"	"	2Q4		"	"
	I_{OZL}		97	5.0 V	5.0 V	GND									"	1Q1		-20	"
			98	"	"		GND								"	1Q2		"	"
			99	"	"			GND							"	1Q3		"	"
			100	"	"				GND						"	1Q4		"	"
			101							GND				5.0 V	"	2Q1		"	"
			102								GND			"	"	2Q2		"	"
			103									GND		"	"	2Q3		"	"
			104										GND	"	"	2Q4		"	"

See footnotes at end of device types 06.

TABLE III. Group A inspection for device type 06.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 3	16	17	18	19	20	21	23	24	25	26	27	28		Limits		Unit
			Cases L, K	13	14	15	16	17	18	19	20	21	22	23	24	Measured			
			Test no.	2 $\overline{\text{CLR}}$	2CLK	2Q4	2Q3	2Q2	2Q1	1Q4	1Q3	1Q2	1Q1	1CLK	V_{CC}	terminal	Min	Max	
1	I_{IH3}	3010	53												GND	1 $\overline{\text{CLR}}$		20	µA
Tc = 25°C		"	54												"	1 $\overline{\text{OC}}$		"	"
		"	55												"	1D1		"	"
		"	56												"	1D2		"	"
		"	57												"	1D3		"	"
		"	58												"	1D4		"	"
		"	59												"	2D1		"	"
		"	60												"	2D2		"	"
		"	61												"	2D3		"	"
		"	62												"	2D4		"	"
		"	63												"	2 $\overline{\text{OC}}$		"	"
		"	64	2.7 V											"	2 $\overline{\text{CLR}}$		"	"
		"	65		2.7 V										"	2CLK		"	"
		"	66											2.7 V	"	1CLK		"	"
	I_{IH8}	"	67												"	1 $\overline{\text{CLR}}$		100	"
		"	68												"	1 $\overline{\text{OC}}$		"	"
		"	69												"	1D1		"	"
		"	70												"	1D2		"	"
		"	71												"	1D3		"	"
		"	72												"	1D4		"	"
		"	73												"	2D1		"	"
		"	74												"	2D2		"	"
		"	75												"	2D3		"	"
		"	76												"	2D4		"	"
		"	77												"	2 $\overline{\text{OC}}$		"	"
		"	78	7.0 V											"	2 $\overline{\text{CLR}}$		"	"
		"	79		7.0 V										"	2CLK		"	"
		"	80											7.0 V	"	1CLK		"	"
	I_0	3011 3/	81										2.25 V	2/	"	1Q1	-15	-110	mA
		"	82									2.25 V		"	"	1Q2	"	"	"
		"	83								2.25 V			"	"	1Q3	"	"	"
		"	84							2.25 V				"	"	1Q4	"	"	"
		"	85	5.0 V	2/				2.25 V						"	2Q1	"	"	"
		"	86	"	"			2.25 V							"	2Q2	"	"	"
		"	87	"	"		2.25 V								"	2Q3	"	"	"
		"	88	"	"	2.25 V									"	2Q4	"	"	"
	I_{OZH}		89										2.7 V	2/	"	1Q1		20	µA
			90									2.7 V		"	"	1Q2		"	"
			91								2.7 V			"	"	1Q3			
			92							2.7 V				"	"	1Q4		"	"
			93	5.0 V	2/				2.7 V						"	2Q1		"	"
			94	"	"			2.7 V							"	2Q2		"	"
			95	"	"		2.7 V								"	2Q3		"	"
			96	"	"	2.7 V									"	2Q4		"	"
	I_{OZL}		97										0.4 V	2/	"	1Q1		-20	"
			98									0.4 V		"	"	1Q2		"	"
			99								0.4 V			"	"	1Q3		"	"
			100							0.4 V				"	"	1Q4		"	"
			101	5.0 V	2/				0.4 V						"	2Q1		"	"
			102	"	"			0.4 V							"	2Q2		"	"
			103	"	"		0.4 V								"	2Q3		"	"
			104	"	"	0.4 V									"	2Q4		"	"

See footnotes at end of device types 06.

TABLE III. Group A inspection for device type 06.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 3	2	3	4	5	6	7	9	10	11	12	13	14		Limits		Unit
			Cases L, K	1	2	3	4	5	6	7	8	9	10	11	12	Measured			
			Test no.	1 $\overline{\text{CLR}}$	1 $\overline{\text{OC}}$	1D1	1D2	1D3	1D4	2D1	2D2	2D3	2D4	2 $\overline{\text{OC}}$	GND	terminal	Min	Max	
1 Tc = 25°C	I_{CCH}	3005	105	5.0 V	GND	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	GND	GND	V_{CC}		21	mA
	I_{CCL}	"	106	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	"	V_{CC}		29	"
	I_{CCZ}	"	107	GND	5.0 V	GND	GND	GND	GND	GND	GND	GND	GND	5.0 V	"	V_{CC}		31	"
2	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = +125°C and V_{IC} tests are omitted.																		
3	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = -55°C and V_{IC} tests are omitted.																		
7 4/ Tc = 25°C	Truth table tests 8/	3014	108	A	B	B	B	B	B	B	B	B	B	B	GND	All outputs	5/	5/	
		"	109	"	"	B	B	B	B	B	B	B	B	B	"		"	"	
		"	110	"	"	A	A	A	A	A	A	A	A	A	"	"	"	"	
		"	111	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
		"	112	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
		"	113	"	"	B	B	B	B	B	B	B	B	B	"	"	"	"	
		"	114	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
		"	115	B	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
		"	116	"	"	A	A	A	A	A	A	A	A	A	"	"	"	"	
		"	117	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
		"	118	A	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
		"	119	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
		"	120	"	"	B	B	B	B	B	B	B	B	B	"	"	"	"	
		"	121	"	"	A	A	A	A	A	A	A	A	A	"	"	"	"	
		"	122	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
		"	123	B	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
8	Same tests, terminal conditions, and limits as for subgroup 7, except T_C = +125°C and -55°C.																		
9 Tc = 25°C	f_{MAX} 5/	Fig.4	124	3.5 V	GND	IN									GND	1Q1	30		MHz
		"	125	"	"		IN								"	1Q2	"		"
		"	126	"	"			IN							"	1Q3	"		"
		"	127	"	"				IN						"	1Q4	"		"
		"	128							IN				GND	"	2Q1	"		"
		"	129								IN			"	"	2Q2	"		"
		"	130									IN		"	"	2Q3	"		"
		"	131										IN	"	"	2Q4	"		"
	t_{PHL1}	3003 Fig 4	132	IN	GND	3.5 V									"	1 $\overline{\text{CLR}}$ to 1Q1	6	19	ns
		"	133	"	"		3.5 V								"	1 $\overline{\text{CLR}}$ to 1Q2	"	"	"
		"	134	"	"			3.5 V							"	1 $\overline{\text{CLR}}$ to 1Q3	"	"	"
		"	135	"	"				3.5 V						"	1 $\overline{\text{CLR}}$ to 1Q4	"	"	"
		"	136							3.5 V				GND	"	2 $\overline{\text{CLR}}$ to 2Q1	"	"	"
		"	137								3.5 V			"	"	2 $\overline{\text{CLR}}$ to 2Q2	"	"	"
		"	138									3.5 V		"	"	2 $\overline{\text{CLR}}$ to 2Q3	"	"	"
		"	139										3.5 V	"	"	2 $\overline{\text{CLR}}$ to 2Q4	"	"	"
	t_{PLH2}	"	140	3.5 V	GND	IN									"	1CLK to 1Q1	4	12	"
		"	141	"	"		IN								"	1CLK to 1Q2	"	"	"
		"	142	"	"			IN							"	1CLK to 1Q3	"	"	"
		"	143	"	"				IN						"	1CLK to 1Q4	"	"	"
		"	144							IN				GND	"	2CLK to 2Q1	"	"	"
		"	145								IN			"	"	2CLK to 2Q2	"	"	"
		"	146									IN		"	"	2CLK to 2Q3	"	"	"
		"	147										IN	"	"	2CLK to 2Q4	"	"	"

See footnotes at end of device types 06.

TABLE III. Group A inspection for device type 06.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 3	16	17	18	19	20	21	23	24	25	26	27	28		Limits		Unit
			Cases L, K	13	14	15	16	17	18	19	20	21	22	23	24	Measured			
			Test no.	2 $\overline{\text{CLR}}$	2CLK	2Q4	2Q3	2Q2	2Q1	1Q4	1Q3	1Q2	1Q1	1CLK	V_{CC}	terminal	Min	Max	
1 Tc = 25°C	I_{CCH}	3005	105	5.0 V	2/									2/	5.5 V	V_{CC}		21	mA
	I_{CCL}	"	106	GND	"									"	"	V_{CC}		29	"
	I_{CCZ}	"	107	"	"									"	"	V_{CC}		31	"
2	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = +125°C and V_{IC} tests are omitted.																		
3	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = -55°C and V_{IC} tests are omitted.																		
7 4/ Tc = 25°C	Truth table tests 8/	3014	108	A	B	X	X	X	X	X	X	X	X	B	5.0 V	All outputs	5/	5/	
		"	109	"	A	L	L	L	L	L	L	L	L	A	"		"	"	
		"	110	"	A	"	"	"	"	"	"	"	"	A	"	"	"	"	
		"	111	"	B	"	"	"	"	"	"	"	"	B	"	"	"	"	
		"	112	"	A	H	H	H	H	H	H	H	H	A	"	"	"	"	
		"	113	"	A	"	"	"	"	"	"	"	"	A	"	"	"	"	
		"	114	"	B	"	"	"	"	"	"	"	"	B	"	"	"	"	
		"	115	B	"	L	L	L	L	L	L	L	L	"	"	"	"	"	
		"	116	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
		"	117	"	A	"	"	"	"	"	"	"	"	A	"	"	"	"	
		"	118	A	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
		"	119	"	"	H	H	H	H	H	H	H	H	"	"	"	"	"	
		"	120	"	"	L	L	L	L	L	L	L	L	"	"	"	"	"	
		"	121	"	B	L	L	L	L	L	L	L	L	B	"	"	"	"	
		"	122	"	A	H	H	H	H	H	H	H	H	A	"	"	"	"	
		"	123	B	A	L	L	L	L	L	L	L	L	A	"	"	"	"	
8	Same tests, terminal conditions, and limits as for subgroup 7, except T_C = +125°C and -55°C.																		
9 Tc = 25°C	f_{MAX} 5/	Fig. 4	124										OUT	IN	5.0 V	1Q1	30		MHz
		"	125									OUT		"	"	1Q2	"		"
		"	126								OUT			"	"	1Q3	"		"
		"	127							OUT				"	"	1Q4	"		"
		"	128	3.5 V	IN				OUT						"	2Q1	"		"
		"	129	"	"			OUT							"	2Q2	"		"
		"	130	"	"		OUT								"	2Q3	"		"
		"	131	"	"	OUT									"	2Q4	"		"
	t_{PHL1}	3003 Fig 4	132										OUT	IN	"	$1\overline{\text{CLR}}$ to 1Q1	6	19	ns
		"	133									OUT		"	"	$1\overline{\text{CLR}}$ to 1Q2	"	"	"
		"	134								OUT			"	"	$1\overline{\text{CLR}}$ to 1Q3	"	"	"
		"	135							OUT				"	"	$1\overline{\text{CLR}}$ to 1Q4	"	"	"
		"	136	IN	IN				OUT						"	$2\overline{\text{CLR}}$ to 2Q1	"	"	"
		"	137	"	"			OUT							"	$2\overline{\text{CLR}}$ to 2Q2	"	"	"
		"	138	"	"		OUT								"	$2\overline{\text{CLR}}$ to 2Q3	"	"	"
		"	139	"	"	OUT									"	$2\overline{\text{CLR}}$ to 2Q4	"	"	"
	t_{PLH2}	"	140										OUT	2/	"	1CLK to 1Q1	4	12	"
		"	141									OUT		"	"	1CLK to 1Q2	"	"	"
		"	142								OUT			"	"	1CLK to 1Q3	"	"	"
		"	143							OUT				"	"	1CLK to 1Q4	"	"	"
		"	144	3.5 V	2/				OUT						"	2CLK to 2Q1	"	"	"
		"	145	"	"			OUT							"	2CLK to 2Q2	"	"	"
		"	146	"	"		OUT								"	2CLK to 2Q3	"	"	"
		"	147	"	"	OUT									"	2CLK to 2Q4	"	"	"

See footnotes at end of device types 06.

TABLE III. Group A inspection for device type 06.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 3	2	3	4	5	6	7	9	10	11	12	13	14		Limits		Unit
			Cases L, K	1	2	3	4	5	6	7	8	9	10	11	12	Measured			
			Test no.	1 $\overline{\text{CLR}}$	1 $\overline{\text{OC}}$	1D1	1D2	1D3	1D4	2D1	2D2	2D3	2D4	2 $\overline{\text{OC}}$	GND	terminal	Min	Max	
9 Tc = 25°C	t_{PHL2}	3003 Fig. 4	148	3.5 V	GND	IN									GND	1CLK to 1Q1	4	12	ns
			149	"	"		IN								"	1CLK to 1Q2	"	"	"
			150	"	"			IN							"	1CLK to 1Q3	"	"	"
			151	"	"				IN						"	1CLK to 1Q4	"	"	"
			152							IN				GND	"	2CLK to 2Q1	"	"	"
			153								IN			"	"	2CLK to 2Q2	"	"	"
			154									IN		"	"	2CLK to 2Q3	"	"	"
			155										IN	"	"	2CLK to 2Q4	"	"	"
	t_{PZL}	"	156	3.5 V	IN	GND									"	1 $\overline{\text{OC}}$ to 1Q1	"	18	"
		"	157	"	"		GND								"	1 $\overline{\text{OC}}$ to 1Q2	"	"	"
		"	158	"	"			GND							"	1 $\overline{\text{OC}}$ to 1Q3	"	"	"
		"	159	"	"				GND						"	1 $\overline{\text{OC}}$ to 1Q4	"	"	"
		"	160							GND				IN	"	2 $\overline{\text{OC}}$ to 2Q1	"	"	"
		"	161								GND			"	"	2 $\overline{\text{OC}}$ to 2Q2	"	"	"
		"	162									GND		"	"	2 $\overline{\text{OC}}$ to 2Q3	"	"	"
		"	163										GND	"	"	2 $\overline{\text{OC}}$ to 2Q4	"	"	"
	t_{PZH}	"	164	3.5 V	IN	5.0 V									"	1 $\overline{\text{OC}}$ to 1Q1	"	"	"
		"	165	"	"		5.0 V								"	1 $\overline{\text{OC}}$ to 1Q2	"	"	"
		"	166	"	"			5.0 V							"	1 $\overline{\text{OC}}$ to 1Q3	"	"	"
		"	167	"	"				5.0 V						"	1 $\overline{\text{OC}}$ to 1Q4	"	"	"
		"	168							5.0 V				IN	"	2 $\overline{\text{OC}}$ to 2Q1	"	"	"
		"	169								5.0 V			"	"	2 $\overline{\text{OC}}$ to 2Q2	"	"	"
		"	170									5.0 V		"	"	2 $\overline{\text{OC}}$ to 2Q3	"	"	"
		"	171										5.0 V	"	"	2 $\overline{\text{OC}}$ to 2Q4	"	"	"
	t_{PLZ}	"	172	3.5 V	IN	GND									"	1 $\overline{\text{OC}}$ to 1Q1	3	13	"
		"	173	"	"		GND								"	1 $\overline{\text{OC}}$ to 1Q2	"	"	"
		"	174	"	"			GND							"	1 $\overline{\text{OC}}$ to 1Q3	"	"	"
		"	175	"	"				GND						"	1 $\overline{\text{OC}}$ to 1Q4	"	"	"
		"	176							GND				IN	"	2 $\overline{\text{OC}}$ to 2Q1	"	"	"
		"	177								GND			"	"	2 $\overline{\text{OC}}$ to 2Q2	"	"	"
		"	178									GND		"	"	2 $\overline{\text{OC}}$ to 2Q3	"	"	"
		"	179										GND	"	"	2 $\overline{\text{OC}}$ to 2Q4	"	"	"

See footnotes at end of device types 06.

TABLE III. Group A inspection for device type 06.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 3	16	17	18	19	20	21	23	24	25	26	27	28		Limits		Unit
			Cases L, K	13	14	15	16	17	18	19	20	21	22	23	24	Measured			
			Test no.	2 $\overline{CLR}$	2CLK	2Q4	2Q3	2Q2	2Q1	1Q4	1Q3	1Q2	1Q1	1CLK	V_{CC}	terminal	Min	Max	
9 Tc = 25°C	t_{PHL2}	3003 Fig. 4	148										OUT	2/	5.0 V	1CLK to 1Q1	4	12	ns
		"	149									OUT		"	"	1CLK to 1Q2	"	"	"
		"	150								OUT			"	"	1CLK to 1Q3	"	"	"
		"	151							OUT				"	"	1CLK to 1Q4	"	"	"
		"	152	3.5 V	2/				OUT						"	2CLK to 2Q1	"	"	"
		"	153	"	"			OUT							"	2CLK to 2Q2	"	"	"
		"	154	"	"		OUT								"	2CLK to 2Q3	"	"	"
		"	155	"	"	OUT									"	2CLK to 2Q4	"	"	"
	t_{PZL}	"	156										OUT	IN	"	1 $\overline{OC}$ to 1Q1	"	18	"
		"	157									OUT		2/	"	1 $\overline{OC}$ to 1Q2	"	"	"
		"	158								OUT			"	"	1 $\overline{OC}$ to 1Q3	"	"	"
		"	159							OUT				"	"	1 $\overline{OC}$ to 1Q4	"	"	"
		"	160	3.5 V	2/				OUT						"	2 $\overline{OC}$ to 2Q1	"	"	"
		"	161	"	"			OUT							"	2 $\overline{OC}$ to 2Q2	"	"	"
		"	162	"	"		OUT								"	2 $\overline{OC}$ to 2Q3	"	"	"
		"	163	"	"	OUT									"	2 $\overline{OC}$ to 2Q4	"	"	"
	t_{PZH}	"	164										OUT	2/	GND	1 $\overline{OC}$ to 1Q1	"	"	"
		"	165									OUT		"	"	1 $\overline{OC}$ to 1Q2	"	"	"
		"	166								OUT			"	"	1 $\overline{OC}$ to 1Q3	"	"	"
		"	167							OUT					"	1 $\overline{OC}$ to 1Q4	"	"	"
		"	168	3.5 V	2/				OUT						"	2 $\overline{OC}$ to 2Q1	"	"	"
		"	169	"	"			OUT							"	2 $\overline{OC}$ to 2Q2	"	"	"
		"	170	"	"		OUT								"	2 $\overline{OC}$ to 2Q3	"	"	"
		"	171	"	"	OUT									"	2 $\overline{OC}$ to 2Q4	"	"	"
	t_{PLZ}	"	172										OUT	2/	"	1 $\overline{OC}$ to 1Q1	3	13	"
		"	173									OUT		"	"	1 $\overline{OC}$ to 1Q2	"	"	"
		"	174								OUT			"	"	1 $\overline{OC}$ to 1Q3	"	"	"
		"	175							OUT					"	1 $\overline{OC}$ to 1Q4	"	"	"
		"	176	3.5 V	2/				OUT						"	2 $\overline{OC}$ to 2Q1	"	"	"
		"	177	"	"			OUT							"	2 $\overline{OC}$ to 2Q2	"	"	"
		"	178	"	"		OUT								"	2 $\overline{OC}$ to 2Q3	"	"	"
		"	179	"	"	OUT									"	2 $\overline{OC}$ to 2Q4	"	"	"

See footnotes at end of device types 06.

TABLE III. Group A inspection for device type 06.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 3	2	3	4	5	6	7	9	10	11	12	13	14		Limits		Unit
			Cases L, K	1	2	3	4	5	6	7	8	9	10	11	12	Measured			
			Test no.	1 $\overline{\text{CLR}}$	1 $\overline{\text{OC}}$	1D1	1D2	1D3	1D4	2D1	2D2	2D3	2D4	2 $\overline{\text{OC}}$	GND	terminal	Min	Max	
9	t_{PHZ}	3003 Fig. 4	180	3.5 V	IN	5.0 V									GND	1 $\overline{\text{OC}}$ to 1Q1	2	8	ns
Tc = 25°C		"	181	"	"		5.0 V								"	1 $\overline{\text{OC}}$ to 1Q2	"	"	"
		"	182	"	"			5.0 V							"	1 $\overline{\text{OC}}$ to 1Q3	"	"	"
		"	183	"	"				5.0 V						"	1 $\overline{\text{OC}}$ to 1Q4	"	"	"
		"	184							5.0 V				IN	"	2 $\overline{\text{OC}}$ to 2Q1	"	"	"
		"	185								5.0 V			"	"	2 $\overline{\text{OC}}$ to 2Q2	"	"	"
		"	186									5.0 V		"	"	2 $\overline{\text{OC}}$ to 2Q3	"	"	"
		"	187										5.0 V	"	"	2 $\overline{\text{OC}}$ to 2Q4	"	"	"
10	f_{MAX}	Same tests and terminal conditions as for subgroup 9, except T_C = +125°C.															30		MHz
	t_{PHL1}																6	22	ns
	t_{PLH2}																4	15	"
	t_{PHL2}																"	"	"
	t_{PZL}																"	21	"
	t_{PZH}																"	"	"
	t_{PLZ}																3	15	"
	t_{PHZ}																2	10	"
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																		

See footnotes at end of device types 06.

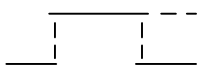
TABLE III. Group A inspection for device type 06.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 3	16	17	18	19	20	21	23	24	25	26	27	28		Limits		Unit
			Cases L, K	13	14	15	16	17	18	19	20	21	22	23	24	Measured			
			Test no.	2 $\overline{CLR}$	2CLK	2Q4	2Q3	2Q2	2Q1	1Q4	1Q3	1Q2	1Q1	1CLK	V_{CC}	terminal	Min	Max	
9	t_{PHLZ}	3003 Fig. 4	180										OUT	2/	5.0 V	1 $\overline{OC}$ to 1Q1	2	8	ns
Tc = 25°C		"	181									OUT		"	"	1 $\overline{OC}$ to 1Q2	"	"	"
		"	182								OUT			"	"	1 $\overline{OC}$ to 1Q3	"	"	"
		"	183							OUT				"	"	1 $\overline{OC}$ to 1Q4	"	"	"
		"	184	3.5 V	2/				OUT						"	2 $\overline{OC}$ to 2Q1	"	"	"
		"	185	"	"			OUT							"	2 $\overline{OC}$ to 2Q2	"	"	"
		"	186	"	"		OUT								"	2 $\overline{OC}$ to 2Q3	"	"	"
		"	187	"	"	OUT									"	2 $\overline{OC}$ to 2Q4	"	"	"
10	f_{MAX}	Same tests and terminal conditions as for subgroup 9, except T_C = +125°C.															30		MHz
	t_{PHL1}																6	22	ns
	t_{PLH2}																4	15	"
	t_{PHL2}																"	"	"
	t_{PZL}																"	21	"
	t_{PZH}																"	"	"
	t_{PLZ}																3	15	"
	t_{PHZ}																2	10	"
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																		

See footnotes at end of device types 06.

1/ Pins not references are N/C.

2/ Apply  3.0 V –5.5 V

0.0 V pulse prior to test.

3/ Method 3011 shall be used, except the output voltage shall be as specified herein, and the output current shall be operating rather than short circuit current. The output conditions have been chosen to produce a current that closely approximates one half of the true short circuit output current $I_{os.}$

4/ Tests shall be performed in sequence, attributes data only.

5/ Output voltages shall be either: (1) H ≥ 2.4 V minimum and L ≤ 0.4 V maximum when using a high-speed checker double comparator; (2) H ≥ 1.5 V and L ≤ 1.5 V when using high-speed checker single comparator.

6/ f_{MAX} limit is the frequency of the input pulse. The output frequency shall be one-half the input frequency.

7/ I_{IL} limits shall be as follows:

Test	Min/Max limits in (μA) for circuit		
	A	B	C
I_{IL3}	0/-200	0/-200	0/-200

8/ A = 3.0 V minimum; B = 0.0 V or GND.

TABLE III. Group A inspection for device type 07.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 3	2	3	4	5	6	7	9	10	11	12	13	14		Limits		Unit
			Cases L, K	1	2	3	4	5	6	7	8	9	10	11	12	Measured			
			Test no.	1 $\overline{PR}$	1 $\overline{OC}$	1D1	1D2	1D3	1D4	2D1	2D2	2D3	2D4	2 $\overline{OC}$	GND	terminal	Min	Max	
1	V_{OH}	3006	1	2.0 V	0.8 V	0.8 V									GND	1 $\overline{Q}$ 1	2.4		V
Tc = 25°C		"	2	"	"		0.8 V								"	1 $\overline{Q}$ 2	"		"
		"	3	"	"			0.8 V							"	1 $\overline{Q}$ 3	"		"
		"	4	"	"				0.8 V						"	1 $\overline{Q}$ 4	"		"
		"	5							0.8 V				0.8 V	"	2 $\overline{Q}$ 1	"		"
		"	6								0.8 V			"	"	2 $\overline{Q}$ 2	"		"
		"	7									0.8 V		"	"	2 $\overline{Q}$ 3	"		"
		"	8										0.8 V	"	"	2 $\overline{Q}$ 4	"		"
	V_{OL}	3007	9	2.0 V	0.8 V	2.0 V									"	1 $\overline{Q}$ 1		0.4	"
		"	10	"	"		2.0 V								"	1 $\overline{Q}$ 2		"	"
		"	11	"	"			2.0 V							"	1 $\overline{Q}$ 3		"	"
		"	12	"	"				2.0 V						"	1 $\overline{Q}$ 4		"	"
		"	13							2.0 V				0.8 V	"	2 $\overline{Q}$ 1		"	"
		"	14								2.0 V			"	"	2 $\overline{Q}$ 2		"	"
		"	15									2.0 V		"	"	2 $\overline{Q}$ 3		"	"
		"	16										2.0 V	"	"	2 $\overline{Q}$ 4		"	"
		"	17	0.8 V	0.8 V										"	1 $\overline{Q}$ 1		"	"
		"	18	"	"										"	1 $\overline{Q}$ 2		"	"
		"	19	"	"										"	1 $\overline{Q}$ 3		"	"
		"	20	"	"										"	1 $\overline{Q}$ 4		"	"
		"	21											0.8 V	"	2 $\overline{Q}$ 1		"	"
		"	22											"	"	2 $\overline{Q}$ 2		"	"
		"	23											"	"	2 $\overline{Q}$ 3		"	"
		"	24											"	"	2 $\overline{Q}$ 4		"	"

See footnotes at end of device types 07.

TABLE III. Group A inspection for device type 07.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 3	16	17	18	19	20	21	23	24	25	26	27	28		Limits		Unit
			Cases L, K	13	14	15	16	17	18	19	20	21	22	23	24	Measured			
			Test no.	2 $\overline{PR}$	2CLK	2 $\overline{Q}$ 4	2 $\overline{Q}$ 3	2 $\overline{Q}$ 2	2 $\overline{Q}$ 1	1 $\overline{Q}$ 4	1 $\overline{Q}$ 3	1 $\overline{Q}$ 2	1 $\overline{Q}$ 1	1CLK	V_{CC}	terminal	Min	Max	
1	V_{OH}	3006	1										-1.0 mA	2/	4.5 V	1 $\overline{Q}$ 1	2.4		V
Tc = 25°C		"	2									-1.0 mA		"	"	1 $\overline{Q}$ 2	"		"
		"	3								-1.0 mA			"	"	1 $\overline{Q}$ 3	"		"
		"	4							-1.0 mA				"	"	1 $\overline{Q}$ 4	"		"
		"	5	2.0 V	2/				-1.0 mA						"	2 $\overline{Q}$ 1	"		"
		"	6	"	"			-1.0 mA							"	2 $\overline{Q}$ 2	"		"
		"	7	"	"		-1.0 mA								"	2 $\overline{Q}$ 3	"		"
		"	8	"	"	-1.0 mA									"	2 $\overline{Q}$ 4	"		"
	V_{OL}	3007	9										12 mA	2/	"	1 $\overline{Q}$ 1		0.4	"
		"	10									12 mA		"	"	1 $\overline{Q}$ 2		"	"
		"	11								12 mA			"	"	1 $\overline{Q}$ 3		"	"
		"	12							12 mA				"	"	1 $\overline{Q}$ 4		"	"
		"	13	2.0 V	2/				12 mA						"	2 $\overline{Q}$ 1		"	"
		"	14	"	"			12 mA							"	2 $\overline{Q}$ 2		"	"
		"	15	"	"		12 mA								"	2 $\overline{Q}$ 3		"	"
		"	16	"	"	12 mA									"	2 $\overline{Q}$ 4		"	"
		"	17										12 mA		"	1 $\overline{Q}$ 1		"	"
		"	18									12 mA			"	1 $\overline{Q}$ 2		"	"
		"	19								12 mA				"	1 $\overline{Q}$ 3		"	"
		"	2							12 mA					"	1 $\overline{Q}$ 4		"	"
		"	21	0.8 V					12 mA						"	2 $\overline{Q}$ 1		"	"
		"	22	"				12 mA							"	2 $\overline{Q}$ 2		"	"
		"	23	"			12 mA								"	2 $\overline{Q}$ 3		"	"
		"	24	"		12 mA									"	2 $\overline{Q}$ 4		"	"

See footnotes at end of device types 07.

TABLE III. Group A inspection for device type 07.
Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 3	2	3	4	5	6	7	9	10	11	12	13	14		Limits		Unit
			Cases L, K	1	2	3	4	5	6	7	8	9	10	11	12	Measured			
			Test no.	1 $\overline{PR}$	1 $\overline{OC}$	1D1	1D2	1D3	1D4	2D1	2D2	2D3	2D4	2 $\overline{OC}$	GND	terminal	Min	Max	
1	V_{IC}		25	-18 mA											GND	1 $\overline{PR}$		-1.5	V
Tc = 25°C			26		-18 mA										"	1 $\overline{OC}$		"	"
			27			-18 mA									"	1D1		"	"
			28				-18 mA								"	1D2		"	"
			29					-18 mA							"	1D3		"	"
			30						-18 mA						"	1D4		"	"
			31							-18 mA					"	2D1		"	"
			32								-18 mA				"	2D2		"	"
			33									-18 mA			"	2D3		"	"
			34										-18 mA		"	2D4		"	"
			35											-18 mA	"	2 $\overline{OC}$		"	"
			36												"	2 $\overline{PR}$		"	"
			37												"	2CLK		"	"
			38												"	1CLK		"	"
	I_{IL3}	3009	39	0.4 V											"	1 $\overline{PR}$	7/	7/	µA
		"	40		0.4 V										"	1 $\overline{OC}$	"	"	"
		"	41			0.4 V									"	1D1	"	"	"
		"	42				0.4 V								"	1D2	"	"	"
		"	43					0.4 V							"	1D3	"	"	"
		"	44						0.4 V						"	1D4	"	"	"
		"	45							0.4 V					"	2D1	"	"	"
		"	46								0.4 V				"	2D2	"	"	"
		"	47									0.4 V			"	2D3	"	"	"
		"	48										0.4 V		"	2D4	"	"	"
		"	49											0.4 V	"	2 $\overline{OC}$	"	"	"
		"	50												"	2 $\overline{PR}$	"	"	"
		"	51												"	2CLK	"	"	"
		"	52												"	1CLK	"	"	"
	I_{IH3}	3010	53	2.7 V											"	1 $\overline{PR}$		20	µA
		"	54		2.7 V										"	1 $\overline{OC}$		"	"
		"	55			2.7 V									"	1D1		"	"
		"	56				2.7 V								"	1D2		"	"
		"	57					2.7 V							"	1D3		"	"
		"	58						2.7 V						"	1D4		"	"
		"	59							2.7 V					"	2D1		"	"
		"	60								2.7 V				"	2D2		"	"
		"	61									2.7 V			"	2D3		"	"
		"	62										2.7 V		"	2D4		"	"
		"	63											2.7 V	"	2 $\overline{OC}$		"	"
		"	64												"	2 $\overline{PR}$		"	"
		"	65												"	2CLK		"	"
		"	66												"	1CLK		"	"

See footnotes at end of device types 07.

TABLE III. Group A inspection for device type 07.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 3	16	17	18	19	20	21	23	24	25	26	27	28		Limits		Unit
			Cases L, K	13	14	15	16	17	18	19	20	21	22	23	24	Measured			
			Test no.	2 $\overline{PR}$	2CLK	2 $\overline{Q}$ 4	2 $\overline{Q}$ 3	2 $\overline{Q}$ 2	2 $\overline{Q}$ 1	1 $\overline{Q}$ 4	1 $\overline{Q}$ 3	1 $\overline{Q}$ 2	1 $\overline{Q}$ 1	1CLK	V_{CC}	terminal	Min	Max	
1	V_{IC}		25												4.5 V	1 $\overline{PR}$		-1.5	V
Tc = 25°C			26												"	1 $\overline{OC}$		"	"
			27												"	1D1		"	"
			28												"	1D2		"	"
			29												"	1D3		"	"
			30												"	1D4		"	"
			31												"	2D1		"	"
			32												"	2D2		"	"
			33												"	2D3		"	"
			34												"	2D4		"	"
			35												"	2 $\overline{OC}$		"	"
			36	-18 mA											"	2 $\overline{PR}$		"	"
			37		-18 mA										"	2CLK		"	"
			38											-18 mA	"	1CLK		"	"
	I_{IL3}	3009	39												5.5 V	1 $\overline{PR}$	7/	7/	µA
		"	40												"	1 $\overline{OC}$	"	"	"
		"	41												"	1D1	"	"	"
		"	42												"	1D2	"	"	"
		"	43												"	1D3	"	"	"
		"	44												"	1D4	"	"	"
		"	45												"	2D1	"	"	"
		"	46												"	2D2	"	"	"
		"	47												"	2D3	"	"	"
		"	48												"	2D4	"	"	"
		"	49												"	2 $\overline{OC}$	"	"	"
		"	50	0.4 V											"	2 $\overline{PR}$	"	"	"
		"	51		0.4 V										"	2CLK	"	"	"
		"	52											0.4 V	"	1CLK	"	"	"
	I_{IH3}	3010	53												5.5 V	1 $\overline{PR}$		20	µA
		"	54												"	1 $\overline{OC}$		"	"
		"	55												"	1D1		"	"
		"	56												"	1D2		"	"
		"	57												"	1D3		"	"
		"	58												"	1D4		"	"
		"	59												"	2D1		"	"
		"	60												"	2D2		"	"
		"	61												"	2D3		"	"
		"	62												"	2D4		"	"
		"	63												"	2 $\overline{OC}$		"	"
		"	64	2.7 V											"	2 $\overline{PR}$		"	"
		"	65		2.7 V										"	2CLK		"	"
		"	66											2.7 V	"	1CLK		"	"

See footnotes at end of device types 07.

TABLE III. Group A inspection for device type 07.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 3	2	3	4	5	6	7	9	10	11	12	13	14		Limits		Unit
			Cases L, K	1	2	3	4	5	6	7	8	9	10	11	12	Measured			
			Test no.	1 $\overline{PR}$	1 $\overline{OC}$	1D1	1D2	1D3	1D4	2D1	2D2	2D3	2D4	2 $\overline{OC}$	GND	terminal	Min	Max	
1	I_{IH8}	3010	67	7.0 V											GND	1 $\overline{PR}$		100	"
Tc = 25°C		"	68		7.0 V										"	1 $\overline{OC}$		"	"
		"	69			7.0 V									"	1D1		"	"
		"	70				7.0 V								"	1D2		"	"
		"	71					7.0 V							"	1D3		"	"
		"	72						7.0 V						"	1D4		"	"
		"	73							7.0 V					"	2D1		"	"
		"	74								7.0 V				"	2D2		"	"
		"	75									7.0 V			"	2D3		"	"
		"	76										7.0 V		"	2D4		"	"
		"	77											7.0 V	"	2 $\overline{OC}$		"	"
		"	78												"	2 $\overline{PR}$		"	"
		"	79												"	2CLK		"	"
		"	80												"	1CLK		"	"
	I_0	3011 3/	81	5.0 V	GND	GND									"	1 $\overline{Q}$ 1	-15	-110	mA
		"	82	"	"		GND								"	1 $\overline{Q}$ 2	"	"	"
		"	83	"	"			GND							"	1 $\overline{Q}$ 3	"	"	"
		"	84	"	"				GND						"	1 $\overline{Q}$ 4	"	"	"
		"	85							GND				GND	"	2 $\overline{Q}$ 1	"	"	"
		"	86								GND			"	"	2 $\overline{Q}$ 2	"	"	"
		"	87									GND		"	"	2 $\overline{Q}$ 3	"	"	"
		"	88										GND	"	"	2 $\overline{Q}$ 4	"	"	"
	I_{OZH}		89	5.0 V	5.0 V	GND									"	1 $\overline{Q}$ 1		20	µA
			90	"	"		GND								"	1 $\overline{Q}$ 2		"	"
			91	"	"			GND							"	1 $\overline{Q}$ 3		"	"
			92	"	"				GND						"	1 $\overline{Q}$ 4		"	"
			93							GND				5.0 V	"	2 $\overline{Q}$ 1		"	"
			94								GND			"	"	2 $\overline{Q}$ 2		"	"
			95									GND		"	"	2 $\overline{Q}$ 3		"	"
			96										GND	"	"	2 $\overline{Q}$ 4		"	"
	I_{OZL}		97	5.0 V	5.0 V	5.0 V									"	1 $\overline{Q}$ 1		-20	"
			98	"	"		5.0 V								"	1 $\overline{Q}$ 2		"	"
			99	"	"			5.0 V							"	1 $\overline{Q}$ 3		"	"
			100	"	"				5.0 V						"	1 $\overline{Q}$ 4		"	"
			101							5.0 V				5.0 V	"	2 $\overline{Q}$ 1		"	"
			102								5.0 V			"	"	2 $\overline{Q}$ 2		"	"
			103									5.0 V		"	"	2 $\overline{Q}$ 3		"	"
			104										5.0 V	"	"	2 $\overline{Q}$ 4		"	"

See footnotes at end of device types 07.

TABLE III. Group A inspection for device type 07.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 3	16	17	18	19	20	21	23	24	25	26	27	28		Limits		Unit
			Cases L, K	13	14	15	16	17	18	19	20	21	22	23	24	Measured			
			Test no.	2 $\overline{PR}$	2CLK	2 $\overline{Q}$ 4	2 $\overline{Q}$ 3	2 $\overline{Q}$ 2	2 $\overline{Q}$ 1	1 $\overline{Q}$ 4	1 $\overline{Q}$ 3	1 $\overline{Q}$ 2	1 $\overline{Q}$ 1	1CLK	V_{CC}	terminal	Min	Max	
1	I_{IH8}	3010	67												5.5 V	1 $\overline{PR}$		100	“
Tc = 25°C		“	68												“	1 $\overline{OC}$		“	“
		“	69												“	1D1		“	“
		“	70												“	1D2		“	“
		“	71												“	1D3		“	“
		“	72												“	1D4		“	“
		“	73												“	2D1		“	“
		“	74												“	2D2		“	“
		“	75												“	2D3		“	“
		“	76												“	2D4		“	“
		“	77												“	2 $\overline{OC}$		“	“
		“	78	7.0 V											“	2 $\overline{PR}$		“	“
		“	79		7.0 V										“	2CLK		“	“
		“	80											7.0 V	“	1CLK		“	“
	I_0	3011 3/	81										2.25 V	2/	“	1 $\overline{Q}$ 1	-15	-110	mA
		“	82									2.25 V		“	“	1 $\overline{Q}$ 2	“	“	“
		“	83								2.25 V			“	“	1 $\overline{Q}$ 3	“	“	“
		“	84							2.25 V				“	“	1 $\overline{Q}$ 4	“	“	“
		“	85	5.0 V	2/				2.25 V						“	2 $\overline{Q}$ 1	“	“	“
		“	86	“	“			2.25 V							“	2 $\overline{Q}$ 2	“	“	“
		“	87	“	“		2.25 V								“	2 $\overline{Q}$ 3	“	“	“
		“	88	“	“	2.25 V									“	2 $\overline{Q}$ 4	“	“	“
	I_{OZH}		89										2.7 V	2/	“	1 $\overline{Q}$ 1		20	µA
			90									2.7 V		“	“	1 $\overline{Q}$ 2		“	“
			91								2.7 V			“	“	1 $\overline{Q}$ 3		“	“
			92							2.7 V				“	“	1 $\overline{Q}$ 4		“	“
			93	5.0 V	2/				2.7 V						“	2 $\overline{Q}$ 1		“	“
			94	“	“			2.7 V							“	2 $\overline{Q}$ 2		“	“
			95	“	“		2.7 V								“	2 $\overline{Q}$ 3		“	“
			96	“	“	2.7 V									“	2 $\overline{Q}$ 4		“	“
	I_{OZL}		97										0.4 V	2/	“	1 $\overline{Q}$ 1		-20	“
			98									0.4 V		“	“	1 $\overline{Q}$ 2		“	“
			99								0.4 V			“	“	1 $\overline{Q}$ 3		“	“
			100							0.4 V				“	“	1 $\overline{Q}$ 4		“	“
			101	5.0 V	2/				0.4 V						“	2 $\overline{Q}$ 1		“	“
			102	“	“			0.4 V							“	2 $\overline{Q}$ 2		“	“
			103	“	“		0.4 V								“	2 $\overline{Q}$ 3		“	“
			104	“	“	0.4 V									“	2 $\overline{Q}$ 4		“	“

See footnotes at end of device types 07.

TABLE III. Group A inspection for device type 07.
Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 3	2	3	4	5	6	7	9	10	11	12	13	14		Limits		Unit
			Cases L, K	1	2	3	4	5	6	7	8	9	10	11	12	Measured			
			Test no.	1 $\overline{PR}$	1 $\overline{OC}$	1D1	1D2	1D3	1D4	2D1	2D2	2D3	2D4	2 $\overline{OC}$	GND	terminal	Min	Max	
1 Tc = 25°C	I_{CCH}	3005	105	5.0 V	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	V_{CC}		21	mA
	I_{CCL}	"	106	GND	GND	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	GND	GND	V_{CC}		29	"
	I_{CCZ}	"	107	GND	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	GND	V_{CC}		31	"
2	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = +125°C and V_{IC} tests are omitted.																		
3	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = -55°C and V_{IC} tests are omitted.																		
7 4/ Tc = 25°C	Truth table tests 8/	3014	108	A	B	A	A	A	A	A	A	A	A	B	GND	All outputs	5/	5/	
		"	109	"	"	A	A	A	A	A	A	A	A	"	"		"	"	
		"	110	"	"	B	B	B	B	B	B	B	B	"	"		"	"	
		"	111	"	"	"	"	"	"	"	"	"	"	"	"		"	"	
		"	112	"	"	"	"	"	"	"	"	"	"	"	"		"	"	
		"	113	"	"	A	A	A	A	A	A	A	A	"	"		"	"	
		"	114	"	"	"	"	"	"	"	"	"	"	"	"		"	"	
		"	115	B	"	"	"	"	"	"	"	"	"	"	"		"	"	
		"	116	"	"	B	B	B	B	B	B	B	B	"	"		"	"	
		"	117	"	"	"	"	"	"	"	"	"	"	"	"		"	"	
		"	118	A	"	"	"	"	"	"	"	"	"	"	"		"	"	
		"	119	"	"	"	"	"	"	"	"	"	"	"	"		"	"	
		"	120	"	"	A	A	A	A	A	A	A	A	"	"		"	"	
		"	121	"	"	B	B	B	B	B	B	B	B	"	"		"	"	
		"	122	"	"	"	"	"	"	"	"	"	"	"	"		"	"	
		"	123	B	"	"	"	"	"	"	"	"	"	"	"		"	"	
8	Same tests, terminal conditions, and limits as for subgroup 7, except T_C = +125°C and -55°C.																		
9 Tc = 25°C	f_{MAX} 5/	Fig. 4	124	3.5 V	GND	IN									GND	1 $\overline{Q}$ 1	30		MHz
		"	125	"	"		IN								"	1 $\overline{Q}$ 2	"		"
		"	126	"	"			IN							"	1 $\overline{Q}$ 3	"		"
		"	127	"	"				IN						"	1 $\overline{Q}$ 4	"		"
		"	128							IN				GND	"	2 $\overline{Q}$ 1	"		"
		"	129								IN			"	"	2 $\overline{Q}$ 2	"		"
		"	130									IN		"	"	2 $\overline{Q}$ 3	"		"
		"	131										IN	"	"	2 $\overline{Q}$ 4	"		"
	t_{PHL1}	3003 Fig 4	132	IN	GND	GND									"	1 $\overline{PR}$ to 1 $\overline{Q}$ 1	6	19	ns
		"	133	"	"		GND								"	1 $\overline{PR}$ to 1 $\overline{Q}$ 2	"	"	"
		"	134	"	"			GND							"	1 $\overline{PR}$ to 1 $\overline{Q}$ 3	"	"	"
		"	135	"	"				GND						"	1 $\overline{PR}$ to 1 $\overline{Q}$ 4	"	"	"
		"	136							GND				GND	"	2 $\overline{PR}$ to 2 $\overline{Q}$ 1	"	"	"
		"	137								GND			"	"	2 $\overline{PR}$ to 2 $\overline{Q}$ 2	"	"	"
		"	138									GND		"	"	2 $\overline{PR}$ to 2 $\overline{Q}$ 3	"	"	"
		"	139										GND	"	"	2 $\overline{PR}$ to 2 $\overline{Q}$ 4	"	"	"

See footnotes at end of device types 07.

TABLE III. Group A inspection for device type 07.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 3	16	17	18	19	20	21	23	24	25	26	27	28		Limits		Unit
			Cases L, K	13	14	15	16	17	18	19	20	21	22	23	24	Measured			
			Test no.	2 $\overline{PR}$	2CLK	2 $\overline{Q}$ 4	2 $\overline{Q}$ 3	2 $\overline{Q}$ 2	2 $\overline{Q}$ 1	1 $\overline{Q}$ 4	1 $\overline{Q}$ 3	1 $\overline{Q}$ 2	1 $\overline{Q}$ 1	1CLK	V_{CC}	terminal	Min	Max	
1	I_{CCH}	3005	105	5.0 V	2/									1/	5.5 V	V_{CC}		21	mA
Tc = 25°C	I_{CCL}	"	106	GND	"									"	"	V_{CC}		29	"
	I_{CCZ}	"	107	GND	"									"	"	V_{CC}		31	"
2	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = +125°C and V_{IC} tests are omitted.																		
3	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = -55°C and V_{IC} tests are omitted.																		
7 4/	Truth	3014	108	A	B	X	X	X	X	X	X	X	X	B	5.0 V	All	5/	5/	
Tc = 25°C	table	"	109	"	A	L	L	L	L	L	L	L	L	A	"	outputs	"	"	
	tests	"	110	"	A	"	"	"	"	"	"	"	"	A	"	"	"	"	
	8/	"	111	"	B	"	"	"	"	"	"	"	"	B	"	"	"	"	
		"	112	"	A	H	H	H	H	H	H	H	H	A	"	"	"	"	
		"	113	"	A	"	"	"	"	"	"	"	"	A	"	"	"	"	
		"	114	"	B	"	"	"	"	"	"	"	"	B	"	"	"	"	
		"	115	B	"	L	L	L	L	L	L	L	L	"	"	"	"	"	
		"	116	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
		"	117	"	A	"	"	"	"	"	"	"	"	A	"	"	"	"	
		"	118	A	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
		"	119	"	"	H	H	H	H	H	H	H	H	"	"	"	"	"	
		"	120	"	"	L	L	L	L	L	L	L	L	"	"	"	"	"	
		"	121	"	B	L	L	L	L	L	L	L	L	B	"	"	"	"	
		"	122	"	A	H	H	H	H	H	H	H	H	A	"	"	"	"	
		"	123	B	A	L	L	L	L	L	L	L	L	A	"	"	"	"	
8	Same tests, terminal conditions, and limits as for subgroup 7, except T_C = +125°C and -55°C.																		
9	f_{MAX}	Fig. 4	124										OUT	IN	5.0 V	1 $\overline{Q}$ 1	30		MHz
Tc = 25°C	5/	"	125									OUT		"	"	1 $\overline{Q}$ 2	"		"
		"	126								OUT			"	"	1 $\overline{Q}$ 3	"		"
		"	127							OUT				"	"	1 $\overline{Q}$ 4	"		"
		"	128	3.5 V	IN				OUT						"	2 $\overline{Q}$ 1	"		"
		"	129	"	"			OUT							"	2 $\overline{Q}$ 2	"		"
		"	130	"	"		OUT								"	2 $\overline{Q}$ 3	"		"
		"	131	"	"	OUT									"	2 $\overline{Q}$ 4	"		"
	t_{PHL1}	3003 Fig 4	132										OUT	2/	"	1 $\overline{PR}$ to 1 $\overline{Q}$ 1	6	19	ns
		"	133									OUT		"	"	1 $\overline{PR}$ to 1 $\overline{Q}$ 2	"	"	"
		"	134								OUT			"	"	1 $\overline{PR}$ to 1 $\overline{Q}$ 3	"	"	"
		"	135							OUT				"	"	1 $\overline{PR}$ to 1 $\overline{Q}$ 4	"	"	"
		"	136	IN	2/				OUT						"	2 $\overline{PR}$ to 2 $\overline{Q}$ 1	"	"	"
		"	137	"	"			OUT							"	2 $\overline{PR}$ to 2 $\overline{Q}$ 2	"	"	"
		"	138	"	"		OUT								"	2 $\overline{PR}$ to 2 $\overline{Q}$ 3	"	"	"
		"	139	"	"	OUT									"	2 $\overline{PR}$ to 2 $\overline{Q}$ 4	"	"	"

See footnotes at end of device types 07.

TABLE III. Group A inspection for device type 07.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 3	2	3	4	5	6	7	9	10	11	12	13	14		Limits		Unit
			Cases L, K	1	2	3	4	5	6	7	8	9	10	11	12	Measured			
			Test no.	1 $\overline{PR}$	1 $\overline{OC}$	1D1	1D2	1D3	1D4	2D1	2D2	2D3	2D4	2 $\overline{OC}$	GND	terminal	Min	Max	
9 Tc = 25°C	t_{PLH2}	3003 Fig. 4	140	3.5 V	GND	IN									GND	1CLK to 1 $\overline{Q}$ 1	4	12	ns
		"	141	"	"		IN								"	1CLK to 1 $\overline{Q}$ 2	"	"	"
		"	142	"	"			IN							"	1CLK to 1 $\overline{Q}$ 3	"	"	"
		"	143	"	"				IN						"	1CLK to 1 $\overline{Q}$ 4	"	"	"
		"	144							IN				GND	"	2CLK to 2 $\overline{Q}$ 1	"	"	"
		"	145								IN			"	"	2CLK to 2 $\overline{Q}$ 2	"	"	"
		"	146									IN		"	"	2CLK to 2 $\overline{Q}$ 3	"	"	"
		"	147										IN	"	"	2CLK to 2 $\overline{Q}$ 4	"	"	"
	t_{PHL2}	"	148	3.5 V	GND	IN									"	1CLK to 1 $\overline{Q}$ 1	"	"	"
		"	149	"	"		IN								"	1CLK to 1 $\overline{Q}$ 2	"	"	"
		"	150	"	"			IN							"	1CLK to 1 $\overline{Q}$ 3	"	"	"
		"	151	"	"				IN						"	1CLK to 1 $\overline{Q}$ 4	"	"	"
		"	152							IN				GND	"	2CLK to 2 $\overline{Q}$ 1	"	"	"
		"	153								IN			"	"	2CLK to 2 $\overline{Q}$ 2	"	"	"
		"	154									IN		"	"	2CLK to 2 $\overline{Q}$ 3	"	"	"
		"	155										IN	"	"	2CLK to 2 $\overline{Q}$ 4	"	"	"
	t_{PZL}	"	156	3.5 V	IN	5.0 V									"	1 $\overline{OC}$ to 1 $\overline{Q}$ 1	"	18	"
		"	157	"	"		5.0 V								"	1 $\overline{OC}$ to 1 $\overline{Q}$ 2	"	"	"
		"	158	"	"			5.0 V							"	1 $\overline{OC}$ to 1 $\overline{Q}$ 3	"	"	"
		"	159	"	"				5.0 V						"	1 $\overline{OC}$ to 1 $\overline{Q}$ 4	"	"	"
		"	160							5.0 V				IN	"	2 $\overline{OC}$ to 2 $\overline{Q}$ 1	"	"	"
		"	161								5.0 V			"	"	2 $\overline{OC}$ to 2 $\overline{Q}$ 2	"	"	"
		"	162									5.0 V		"	"	2 $\overline{OC}$ to 2 $\overline{Q}$ 3	"	"	"
		"	163										5.0 V	"	"	2 $\overline{OC}$ to 2 $\overline{Q}$ 4	"	"	"
	t_{PZH}	"	164	3.5 V	IN	GND									"	1 $\overline{OC}$ to 1 $\overline{Q}$ 1	"	"	"
		"	165	"	"		GND								"	1 $\overline{OC}$ to 1 $\overline{Q}$ 2	"	"	"
		"	166	"	"			GND							"	1 $\overline{OC}$ to 1 $\overline{Q}$ 3	"	"	"
		"	167	"	"				GND						"	1 $\overline{OC}$ to 1 $\overline{Q}$ 4	"	"	"
		"	168							GND				IN	"	2 $\overline{OC}$ to 2 $\overline{Q}$ 1	"	"	"
		"	069								GND			"	"	2 $\overline{OC}$ to 2 $\overline{Q}$ 2	"	"	"
		"	170									GND		"	"	2 $\overline{OC}$ to 2 $\overline{Q}$ 3	"	"	"
		"	171										GND	"	"	2 $\overline{OC}$ to 2 $\overline{Q}$ 4	"	"	"

See footnotes at end of device types 07.

TABLE III. Group A inspection for device type 07.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 3	16	17	18	19	20	21	23	24	25	26	27	28		Limits		Unit
			Cases L, K	13	14	15	16	17	18	19	20	21	22	23	24	Measured terminal	Min	Max	
			Test no.	2 $\overline{PR}$	2CLK	2 $\overline{Q}$ 4	2 $\overline{Q}$ 3	2 $\overline{Q}$ 2	2 $\overline{Q}$ 1	1 $\overline{Q}$ 4	1 $\overline{Q}$ 3	1 $\overline{Q}$ 2	1 $\overline{Q}$ 1	1CLK	V_{CC}				
9 Tc = 25°C	t_{PLH2}	3003 Fig. 5	140										OUT	2/	GND	1CLK to 1 $\overline{Q}$ 1	4	12	ns
			141									OUT		"	"	1CLK to 1 $\overline{Q}$ 2	"	"	"
		"	142								OUT			"	"	1CLK to 1 $\overline{Q}$ 3	"	"	"
		"	143							OUT				"	"	1CLK to 1 $\overline{Q}$ 4	"	"	"
		"	144	3.5 V	2/				OUT						"	2CLK to 2 $\overline{Q}$ 1	"	"	"
		"	145	"	"			OUT							"	2CLK to 2 $\overline{Q}$ 2	"	"	"
		"	146	"	"		OUT								"	2CLK to 2 $\overline{Q}$ 3	"	"	"
		"	147	"	"	OUT									"	2CLK to 2 $\overline{Q}$ 4	"	"	"
	t_{PHL2}	"	148										OUT	2/	5.0 V	1CLK to 1 $\overline{Q}$ 1	"	"	"
			149									OUT		"	"	1CLK to 1 $\overline{Q}$ 2	"	"	"
		"	150								OUT			"	"	1CLK to 1 $\overline{Q}$ 3	"	"	"
		"	151							OUT				"	"	1CLK to 1 $\overline{Q}$ 4	"	"	"
		"	152	3.5 V	2/				OUT						"	2CLK to 2 $\overline{Q}$ 1	"	"	"
		"	153	"	"			OUT							"	2CLK to 2 $\overline{Q}$ 2	"	"	"
		"	154	"	"		OUT								"	2CLK to 2 $\overline{Q}$ 3	"	"	"
		"	155	"	"	OUT									"	2CLK to 2 $\overline{Q}$ 4	"	"	"
	t_{PZL}	"	156										OUT	2/	"	1 $\overline{OC}$ to 1 $\overline{Q}$ 1	"	18	"
		"	157									OUT		"	"	1 $\overline{OC}$ to 1 $\overline{Q}$ 2	"	"	"
		"	158								OUT			"	"	1 $\overline{OC}$ to 1 $\overline{Q}$ 3	"	"	"
		"	159							OUT				"	"	1 $\overline{OC}$ to 1 $\overline{Q}$ 4	"	"	"
		"	160	3.5 V	2/				OUT						"	2 $\overline{OC}$ to 2 $\overline{Q}$ 1	"	"	"
		"	161	"	"			OUT							"	2 $\overline{OC}$ to 2 $\overline{Q}$ 2	"	"	"
		"	162	"	"		OUT								"	2 $\overline{OC}$ to 2 $\overline{Q}$ 3	"	"	"
		"	163	"	"	OUT									"	2 $\overline{OC}$ to 2 $\overline{Q}$ 4	"	"	"
	t_{PZH}	"	164										OUT	2/	"	1 $\overline{OC}$ to 1 $\overline{Q}$ 1	"	"	"
		"	165									OUT		"	"	1 $\overline{OC}$ to 1 $\overline{Q}$ 2	"	"	"
		"	166								OUT			"	"	1 $\overline{OC}$ to 1 $\overline{Q}$ 3	"	"	"
		"	167							OUT				"	"	1 $\overline{OC}$ to 1 $\overline{Q}$ 4	"	"	"
		"	168	3.5 V	2/				OUT						"	2 $\overline{OC}$ to 2 $\overline{Q}$ 1	"	"	"
		"	169	"	"			OUT							"	2 $\overline{OC}$ to 2 $\overline{Q}$ 2	"	"	"
		"	170	"	"		OUT								"	2 $\overline{OC}$ to 2 $\overline{Q}$ 3	"	"	"
		"	171	"	"	OUT									"	2 $\overline{OC}$ to 2 $\overline{Q}$ 4	"	"	"

See footnotes at end of device types 07.

TABLE III. Group A inspection for device type 07.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 3	2	3	4	5	6	7	9	10	11	12	13	14		Limits		Unit
			Cases L, K	1	2	3	4	5	6	7	8	9	10	11	12	Measured			
			Test no.	1 $\overline{PR}$	1 $\overline{OC}$	1D1	1D2	1D3	1D4	2D1	2D2	2D3	2D4	2 $\overline{OC}$	GND	terminal	Min	Max	
9 Tc = 25°C	t_{PLZ}	3003 Fig. 4	172	3.5 V	IN	5.0 V									GND	1 $\overline{OC}$ to 1 $\overline{Q}$ 1	3	13	ns
		"	173	"	"		5.0 V								"	1 $\overline{OC}$ to 1 $\overline{Q}$ 2	"	"	"
		"	174	"	"			5.0 V							"	1 $\overline{OC}$ to 1 $\overline{Q}$ 3	"	"	"
		"	175	"	"				5.0 V						"	1 $\overline{OC}$ to 1 $\overline{Q}$ 4	"	"	"
		"	176							5.0 V				IN	"	2 $\overline{OC}$ to 2 $\overline{Q}$ 1	"	"	"
		"	177								5.0 V			"	"	2 $\overline{OC}$ to 2 $\overline{Q}$ 2	"	"	"
		"	178									5.0 V		"	"	2 $\overline{OC}$ to 2 $\overline{Q}$ 3	"	"	"
		"	179										5.0 V	"	"	2 $\overline{OC}$ to 2 $\overline{Q}$ 4	"	"	"
	t_{PHZ}	"	180	3.5 V	IN	GND									"	1 $\overline{OC}$ to 1 $\overline{Q}$ 1	2	8	"
		"	181	"	"		GND								"	1 $\overline{OC}$ to 1 $\overline{Q}$ 2	"	"	"
		"	182	"	"			GND							"	1 $\overline{OC}$ to 1 $\overline{Q}$ 3	"	"	"
		"	183	"	"				GND						"	1 $\overline{OC}$ to 1 $\overline{Q}$ 4	"	"	"
		"	184							GND				IN	"	2 $\overline{OC}$ to 2 $\overline{Q}$ 1	"	"	"
		"	185								GND			"	"	2 $\overline{OC}$ to 2 $\overline{Q}$ 2	"	"	"
		"	186									GND		"	"	2 $\overline{OC}$ to 2 $\overline{Q}$ 3	"	"	"
		"	187										GND	"	"	2 $\overline{OC}$ to 2 $\overline{Q}$ 4	"	"	"
10 Tc = 25°C	f_{MAX}	Same tests and terminal conditions as for subgroup 9, except T_C = +125°C.															30		MHz
	t_{PHL1}																6	22	ns
	t_{PLH2}																4	15	"
	t_{PHL2}																"	15	"
	t_{PZL}																"	21	"
	t_{PZH}																"	21	"
	t_{PLZ}																3	15	"
	t_{PHZ}																2	10	"
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																		

See footnotes at end of device types 07.

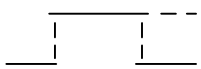
TABLE III. Group A inspection for device type 07.

Terminal conditions (pins not designated may be high ≥ 2.0 V; or low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases 3	16	17	18	19	20	21	23	24	25	26	27	28		Limits		Unit
			Cases L, K	13	14	15	16	17	18	19	20	21	22	23	24	Measured			
			Test no.	2 $\overline{PR}$	2CLK	2 $\overline{Q}$ 4	2 $\overline{Q}$ 3	2 $\overline{Q}$ 2	2 $\overline{Q}$ 1	1 $\overline{Q}$ 4	1 $\overline{Q}$ 3	1 $\overline{Q}$ 2	1 $\overline{Q}$ 1	1CLK	V_{CC}	terminal	Min	Max	
9 Tc = 25°C	t_{PLZ}	3003 Fig. 4	172										OUT	2/	5.0 V	1 $\overline{OC}$ to 1 $\overline{Q}$ 1	3	13	ns
		"	173									OUT		"	"	1 $\overline{OC}$ to 1 $\overline{Q}$ 2	"	"	"
		"	174								OUT			"	"	1 $\overline{OC}$ to 1 $\overline{Q}$ 3	"	"	"
		"	175							OUT				"	"	1 $\overline{OC}$ to 1 $\overline{Q}$ 4	"	"	"
		"	176	3.5 V	2/				OUT						"	2 $\overline{OC}$ to 2 $\overline{Q}$ 1	"	"	"
		"	177	"	"			OUT							"	2 $\overline{OC}$ to 2 $\overline{Q}$ 2	"	"	"
		"	178	"	"		OUT								"	2 $\overline{OC}$ to 2 $\overline{Q}$ 3	"	"	"
		"	179	"	"	OUT									"	2 $\overline{OC}$ to 2 $\overline{Q}$ 4	"	"	"
	t_{PHZ}	"	180										OUT	2/	"	1 $\overline{OC}$ to 1 $\overline{Q}$ 1	2	8	"
		"	181									OUT		"	"	1 $\overline{OC}$ to 1 $\overline{Q}$ 2	"	"	"
		"	182								OUT			"	"	1 $\overline{OC}$ to 1 $\overline{Q}$ 3	"	"	"
		"	183							OUT				"	"	1 $\overline{OC}$ to 1 $\overline{Q}$ 4	"	"	"
		"	184	3.5 V	2/				OUT						"	2 $\overline{OC}$ to 2 $\overline{Q}$ 1	"	"	"
		"	185	"	"			OUT							"	2 $\overline{OC}$ to 2 $\overline{Q}$ 2	"	"	"
		"	186	"	"		OUT								"	2 $\overline{OC}$ to 2 $\overline{Q}$ 3	"	"	"
		"	187	"	"	OUT									"	2 $\overline{OC}$ to 2 $\overline{Q}$ 4	"	"	"
10 Tc = 25°C	f_{MAX}	Same tests and terminal conditions as for subgroup 9, except T_C = +125°C.															30		MHz
	t_{PHL1}																6	22	ns
	t_{PLH2}																4	15	"
	t_{PHL2}																"	15	"
	t_{PZL}																"	21	"
	t_{PZH}																"	21	"
	t_{PLZ}																3	15	"
	t_{PHZ}																2	10	"
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																		

See footnotes at end of device types 07.

1/ Pins not references are N/C.

2/ Apply  3.0 V –5.5 V

0.0 V pulse prior to test.

3/ Method 3011 shall be used, except the output voltage shall be as specified herein, and the output current shall be operating rather than short circuit current. The output conditions have been chosen to produce a current that closely approximates one half of the true short circuit output current $I_{os.}$

4/ Tests shall be performed in sequence, attributes data only.

5/ Output voltages shall be either: (1) H ≥ 2.4 V minimum and L ≤ 0.4 V maximum when using a high-speed checker double comparator; (2) H ≥ 1.5 V and L ≤ 1.5 V when using high-speed checker single comparator.

6/ f_{MAX} limit is the frequency of the input pulse. The output frequency shall be one-half the input frequency.

7/ I_{IL} limits shall be as follows:

Test	Min/Max limits in (μA) for circuit		
	A	B	C
I_{IL3}	0/-200	0/-200	0/-200

8/ A = 3.0 V minimum; B = 0.0 V or GND.

5. PACKAGING

5.1 Packaging requirements. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Service or Defense Agency, or within the military service's system command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

(This section contains information of a general or explanatory nature which may be helpful, but is not mandatory.)

6.1 Intended use. Microcircuits conforming to this specification are intended for original equipment design applications and logistic support of existing equipment.

6.2 Acquisition requirements. Acquisition documents should specify the following:

a. Title, number, and date of the specification.

b. PIN and compliance identifier, if applicable (see 1.2).

c. Requirements for delivery of one copy of the conformance inspection data pertinent to the device inspection lot to be supplied with each shipment by the device manufacturer, if applicable.

d. Requirements for certificate of compliance, if applicable.

e. Requirements for notification of change of product or process to contracting activity in addition to notification to the qualifying activity, if applicable.

f. Requirements for failure analysis (including required test condition of method 5003 of MIL-STD-883), corrective action, and reporting of results, if applicable.

g. Requirements for product assurance options.

h. Requirements for special carriers, lead lengths, or lead forming, if applicable. These requirements shall not affect the part number. Unless otherwise specified, these requirements will not apply to direct purchase by or direct shipment to the Government.

I Requirements for "JAN" marking.

j. Packaging Requirements (see 5.1)

6.3 Superseding information. The requirements of MIL-M-38510 have been superseded to take advantage of the available Qualified Manufacturer Listing (QML) system provided by MIL-PRF-38535. Previous references to MIL-M-38510 in this document have been replaced by appropriate references to MIL-PRF-38535. All technical requirements now consist of this specification and MIL-PRF-38535. The MIL-M-38510 specification sheet number and PIN have been retained to avoid adversely impacting existing government logistics systems and contractor's parts lists.

6.4 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in Qualified Manufacturers List QML-38535 whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or purchase orders for the products covered by this specification. Information pertaining to qualification of products may be obtained from DSCC-VQ, 3990 E. Broad Street, Columbus, Ohio 43218-3990.

6.5 Abbreviations, symbols, and definitions. The abbreviations, symbols, and definitions used herein are defined in MIL-PRF-38535, MIL-HDBK-1331, and as follows:

f_{MAX} ..... Maximum clock frequency
GND ..... Ground zero voltage potential
V_{IN} ..... Voltage level at an input terminal
V_{OC} ..... Output clamp voltage

6.6 Logistic support. Lead materials and finishes (see 3.4) are interchangeable. Unless otherwise specified, microcircuits acquired for Government logistic support will be acquired to device class B (see 1.2.2), lead material and finish A (see 3.4). Longer length leads and lead forming should not affect the part number.

6.7 Substitutability. The cross-reference information below is presented for the convenience of users. Microcircuits covered by this specification will functionally replace the listed generic-industry type. Generic-industry microcircuit types may not have equivalent operational performance characteristics across military temperature ranges or reliability factors equivalent to MIL-M-38510 device types and may have slight physical variations in relation to case size. The presence of this information should not be deemed as permitting substitution of generic-industry types for MIL-M-38510 types or as a waiver of any of the provisions of MIL-PRF-38535.

Military device type	Generic-industry type
01	54ALS74
02	54ALS109
03	54AL112A
04	54ALS574
05	54ALS576
06	54ALS874
07	54ALS876

6.8 Manufacturers' designation. Manufacturers' circuits which form a part of this specification are designated with an "X" as shown in table IV herein.

TABLE IV. Manufacturers' designation.

Device type	Circuits		
	A	B	C
	Texas Instruments	Motorola	National Semiconductor
01	X		
02	X		
03	X		
04	X		
05	X		
06	X		
07	X		

6.9 Change from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue, due to the extensiveness of the changes.

Custodians:
Army - CR
Navy - EC
Air Force - 11
DLA - CC

Preparing activity:
DLA - CC

Review activities:
Army – SM, MI
Navy - AS, CG, MC, SH TD
Air Force – 03, 19, 99

(Project 5962-2057)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organization and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at www.dodssp.daps.mil.